THIS WEEK'S NATIONAL PETROLEUM NEWS

The Recognized Authority on News, Markets and Technical Developments in the Oil Industry

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COMING MEETINGS

American Petroleum Institute, mid-year meeting, Mayo Hotel, Tulsa, Okla., May 13, 14, 15.

Natural Gasoline Association of America, Tulsa Hotel, Tulsa, Okla., May 13, 14, 15.

International Petroleum Exposition and Congress, Tulsa, Okla., May 16 to 23.

Independent Petroleum Assoc. of America, Tulsa, May 21.

Virginia Oil Men's Association, Patrick Henry Hotel, Roanoke, Va., May 21.

National Stripper Well Association, Tulsa, May 22.

Lubricate for Safety Week, May 23 to 30.

Oil Field, Gas Well and Refinery Workers Union, International Convention, Hotel Tulsa, Tulsa, Okla., June 1 to 4.

American Petroleum Institute, Division of Production, Eastern District, William Penn Hotel, Pittsburgh, Pa., June 4 and 5.

Pennsylvania Grade Crude Oil Assn., 13th annual meeting, State College, Pa., June 18, 19.

American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 29 to July 3.

American Petroleum Institute, Division of Production, Mid-Continent District, either Tulsa or Oklahoma City, sometime in Sept.

American Chemical Society, semi-annual meeting, Pittsburgh, Pa., Sept. 7 to 12.

World Power (Fuel) Conference, Washington, D. C., Sept. 7 to 12.

Kentucky Petroleum Marketers Assoc., Brown Hotel, Louisville, Ky., Sept. 9 and 10.

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James C. Scanlan

● James C. Scanlan, treasurer and general manager of the Pennsylvania Oil Co., Somerville, Massachusetts, is now a candidate for state treasurer of Massachusetts.

For the past six years Mr. Scanlan has served in the state Senate, the last two of which he has been Democratic floor leader. He has also served several years on the Somerville School Committee.

The Pennsylvania Oil Co. was started in 1923 by Mr. Scanlan and his father Thomas E. Scanlan. At present the company has a water terminal at Somerville and bulk plants at Worcester and Plymouth. Gasoline, fuel oil and motor oil are distributed by a fleet of 25 trucks through the eastern part of Massachusetts and the southern part of New Hampshire.

NATIONAL PETROLEUM NEWS

VOLUME 28 NUMBER 17

Standard of Indiana Announces Extension of "Iowa Plan"

By E. L. BARRINGER
N. P. N. Staff Writer

CHICAGO, April 16

STANDARD OIL CO. OF INDIANA'S policy of withdrawing from gasoline retailing and leasing company owned service stations to operators, based on its experience in Iowa, is being extended to other states. The announcement was made in the company's 1935 annual report.

In Iowa, where a drastic chain store tax law became effective July 1, 1935, and the new policy was adopted to fit the changed economic order, it resulted in a "measurably increased" volume of sales from company owned stations operated by individual retailers, the report stated.

Operation of the company's new policy last year reduced the number of company controlled outlets by 4109, and the annual report states that a further reduction in the number of owned or controlled stations has taken place in early 1936.

At the close of 1935 the Indiana Standard had 7576 owned or controlled stations, against 11,685 at the close of 1934. The number of company bulk stations at the end of 1935 was 4775 against 4827 at the end of the previous year. The number of dealers, however, increased materially, and at the close of 1935 was 20,500.

Under the "Iowa Plan" the company leases its owned service stations to operators, who have control of the business at that location as their private enterprise. Retail prices are established by the operator, the company setting only the tank-wagon price, and "the company becomes lessor, wholesaler, supplier, and adviser, instead of employer," the report relates.

Iowa's drastic chain store tax law had its inception outside the petroleum industry, but a group of jobbers fought strenuously to have service stations retained as "chain stores."

Ever since the law became effective last summer, and all but one large company withdrew from retailing in Iowa, the "Iowa Plan" has been watched by jobbers and retailers. The general opinion that large companies did not suffer in volume of sales is substantiated for the Indiana Standard in its annual report, although "under-the-canopy" price cutting is reported to be quite prevalent by retailers.

"Enactment of further chain store legislation led to a pronounced alteration in the company's retail marketing policy," stockholders were informed in the annual report.

"For many years Standard of Indiana has been building up a system of company owned and controlled stations, providing carefully supervised, uniform service to the public of a type generally recognized as exemplary.

"The chain store tax law enacted in Iowa made continuation of the system impossible there. The stations could not have earned enough profit to justify payment of the drastic taxes imposed on integral units.

"It accordingly became necessary to turn back leased stations to their owners and to lease company stations to individuals so that all could be operated as separate outlets, not subject to the tax penalties. The company thus practically went out of the business of operating retail outlets in Iowa.

"The results have been rather surprising. While it has been impossible to maintain uniformity of free service, and there has probably been some decline in the employment provided in the stations, the company's sales have not suffered. On the con-

trary, the quantities of products distributed to the same stations have measurably increased.

"On the basis of this experience, it has been decided to place the operation of company-owned stations as largely as possible in the hands of independent dealers. . . . Large numbers of stations in other states have already been converted into such dealer outlets, and in the course of this conversion many former employes have become dealers in their own right, able to develop their own retail business as they see fit."

* * *

Experience, rather than a code, may be required for rationalizing of the marketing of motor fuel, the Standard Oil Co. of Indiana informed stockholders in the annual report.

That part of the statement regarding marketing operations shows that the company is willing to follow a voluntary marketing code, but implies that the remedy for marketing ills will be found elsewhere. The statement from the report referring to the proposed voluntary code follows:

"Often at the cost of losing business your company has pursued what is considered to be sound price policies, and even following expiration of the marketing code it adhered to code rules of fair practice.

"It has constantly showed its willingness to support a voluntary marketing code, though doubtful whether anything short of the hard teaching of experience will completely rationalize the marketing of motor fuel."

Federal Grand Jury Summoned To Organize on April 27

CHICAGO, April 18

WISCONSIN this week was preparing to welcome oil industry leaders in the middle west in Madison to tell a federal grand jury all about what makes the wheels go around, especially about jobber contracts, tank car market prices, and stabilization.

While the grand jury does not get down to business until May 4, the machinery to bring members of the grand jury together for organization on April 27 was set in motion this week.

Jurors were sworn in last December and Federal Judge Patrick T. Stone announced this week that the jury would be organized in Madison April 27. Summons were issued April 15 by Herbert C. Hale, clerk of the district court.

At Washington Attorney General Cummings stated this week that he expects the jury to be in session a long time. The case may occupy several months.

While the jury may subpoena witnesses and evidence from any part of the United States it may not sit outside of the western judicial district of Wisconsin, it is understood.

Cummings said at his most recent press conference that the local federal district attorney and his staff will conduct the investigation with the aid of attorneys and experts from the anti-trust division of the Justice Department.

Would Ban Exclusive Sales Contracts

WASHINGTON, April 20—Tightening of the Clayton anti-trust law to prohibit exclusive-dealing contracts is proposed in a bill (HR-12307) introduced April 15 by Congressman Driscoll, of St. Marys, Pennsylvania, which is in the oil regions of that state.

The bill would declare contracts which are intended to exclude the products of a competitor to be "unfair and an unlawful restraint of trade." Apparently, the measure is aimed at lease and agency and other types of exclusive-dealing arrangements, formerly quite widely used by some major oil companies, which required the distributor or dealer to handle only the gasoline and oils of the supplier.

Many Pennsylvania refiners have fought lease and agency on the grounds that this method of marketing has cut them off from many outlets for their lubricating oils.

Recently, the U. S. Supreme Court's decisions in the West Virginia chain-store tax cases, which have held leased stations part of the "chain" and subject to the heavy taxes, have led to some major companies leasing many of their stations without retaining control. Federal and state social security taxes are accelerating this movement. Even some companies which are continuing their leased stations on a 100 per cent basis as regards gasoline are now leaving it up to the station operator as to what oils he shall sell.

Perhaps the most important feature of the Driscoll Bill is that if it were enacted there would no longer be the necessity of showing that a "tying contract" or exclusive-sale contract, forbidden under Section 3 of the Clayton Act, substantially lessens competition or tends to create a monopoly. This proviso would be dropped entirely.

Besides the declaration of policy in favor of free an open competition, the bill would considerably broaden language of the present law.

The bill would extend the prohibition to any sort of arrangement or inducement offered to the lessee, user, purchaser, seller or distributor on condition that he refrain from using, selling, buying, dealing in or distributing the commodities of another person.

Estimates Crude Demand

By Teletype

OKLAHOMA CITY, April 21—The Bureau of Mines has advised the Oklahoma Corporation Commission that its estimate of market demand for Oklahoma crude during May is 538,300 barrels daily. This represents an increase of 13,300 barrels over the April allowable.

At its monthly meeting April 24, the Commission will confer with Oklahoma operators on the recommendation.

The Editor's Viewpoint

Cornerstone Laid on False Statements About Oil

By Warren C. Platt, *Editor*

WHEN President Roosevelt and Ex-Oil Dictator Ickes picked up George Washington's trowel the other day and took a few swats at the mortar that was to hold the cornerstone of the new Interior Department Building, they evidently forgot at least one of the things that the Father of His Country was famous for.

We refer to that virtue of plain truthfulness that figured so prominently in the episode of the cherry tree. But then that legend is so far back in history that maybe it is not good form to bring it up any more. Anyway, these modern trowel slingers did not give the oil industry a very fair break, but maybe that too is out of date at Washington these days.

Said President Roosevelt just before he seized the honored trowel:

"On occasion there came as cries from the wilderness warnings against the ravaging of our forests, the waste of our top soil and water supplies and the dissipation of our oil reserves and mineral resources."

Now the oil industry, as we recall, thought it was putting up a pretty fair sized shout to get enforcement of existing laws against oil and gas waste and to get enactment of better laws. The industry is of good size and its members are blessed with husky lungs.

When we had the NIRA, the industry demanded enforcement of the oil code but our ex-oil dictator seemingly did not hear it. Finally it was revealed that the code could not be enforced because the teeth were "missing" and had been "missing" for nearly a year before their absence was discovered. The code provision which had been counted on to aid conservation was "lost" somewhere in Ickes' department and the President had autographed the code with this important section not included.

It is strange that Ickes has never referred to this little incident. He has had lots to say about other people's shortcomings but he has never offered a word of explanation for this fiasco. But then dictators, and, we presume, even would-be dictators, are above questioning.

However, what the industry thought was a terrific din for enforcement and enactment of conservation laws sounded to the President only like a few "cries from the wilderness." Well, it was a wilderness of little and no enforcement of law, a wilderness inhabited by wire-tappers in government service and some cousins and uncles—but so far as we know no aunts— of people in high position in this government.

Maybe the wilderness was far deeper and impenetrable than the oil industry thought and that was the reason its loud and emphatic demand sounded only like a few "cries." Maybe we should take the President's word for it that such was the case. But, if so, one would think the clubby thing would have been to have at least one of one of the administration's wire tappers lend an oil man one of those private phones to high places, so our little "cry" might have reached some one who might have moved long before the official machinery did.

ON THE same occasion our gracious ex-oil dictator sounded off with the following.

"Under the petroleum code of the NIRA and under the Connally act at least a beginning has been made toward stopping the reckless overproduction and consequent waste of petroleum and its products which are exhaustible and irreplaceable resources upon which not only the prosperity but the very life of the nation depends."

Ickes ignored the fact that the oil code was ineffective not only because of the "missing" paragraph but because the federal courts held that federal control of production, as was contemplated under the code, was unconstitutional. He also ignored the effective steps which Oklahoma, Texas and other oil producing states have taken to bring about conservation, culminating in the present interstate compact. What has been accomplished towards conservation has been almost entirely through the states' efforts, yet Ickes makes no mention of this.

We have shown, on the several occasions where Ickes has made public comment on the oil industry, that he has absolutely no regard for the truth. He disregards it glaringly in the above statement. It is of course hopeless to ever expect to catch up with a professional prevaricator but, late as we may be in our comment, we feel that every time a cabinet officer, particularly, opens up and strays from the truth in such a deliberate manner as Ickes, that, in justice to

the industry, he should be called to account for it.

If Ickes had wanted to be fair and truthful and if he had wanted to paint an honest picture about the Interior Department, he would have told what a fine job it has helped to do in cooperating with industry and the oil industry for conservation; he would have told of the long struggle for knowledge of oil within the oil industry and in which the industry was greatly aided by the Geological Survey, the Bureau of Standards and the Bureau of Mines.

HE would have told of the great development in ideas, and then in practices, within the oil industry which today are saving millions to the people of this country, a development in which the Interior Department took an important part. He would have told of the great achievements in conservation that the oil industry has accomplished in the past ten years and again with the aid of the competent men from the Interior Department.

But no, on the occasion of a great event in the history of his own department, the erection of a building which in size and equipment will honor his department and permit it to serve the public still better, Ickes must let his own ungracious stupidity and greed for power lead him again into untruthfulness, so that he does not even pay honor and do justice to the thousands of people in his own department who have worked hard and long and intelligently to aid industry to conserve these natural resources and particularly to aid the oil industry.

At least the oil industry can give thanks and pay honor—as it has in the past—to the men in Ickes' department who have so ably and willingly helped it with its problems, even though Ickes would take all credit from them that he might steal some for himself.

And of course Ickes' mendacious mind has already forgotten what a perfect heck of a time the oil industry had with him over trying to get any enforcement of the code and the setting up of the Federal Tender Board system under the Connally "hot" oil amendment to the NIRA.

It would be a fine and gracious act if the oil men, executives and scientists, were to gather at that cornerstone one of these days and pay tribute to what that building really stands for, the unselfish men and women who have labored for so many years with all industry, as well as with the oil industry, for the steady advancement of conservation of America's natural resources; and there tell the true story of oil conservation and of what the thousands of workers in the department have done for it and the public—a story that Ickes left untold.

Invite People to Drive to the Expositions

WHAT oil companies have made plans for inviting gasoline customers to the big Texas Centennial this summer? No one up north or back east knows about them, yet a lot of the prospective automobile traffic should come from these parts of the country.

There may be plenty of time to do all this but between now and June 6th when the main show opens at Dallas, less than two months intervene and that is no time at all to do any selling in.

The oil industry, of course, will naturally carry the largest number of people to this big Centennial without using any sales effort but the possibilities of increasing the percentage that would go by automobile and even increasing the total number of people who visit the exposition is most important.

Other industries have proved that by sales and advertising work, the use and consumption of their products can be increased. There is no reason why the oil industry, by similar sales work, cannot also increase consumption of its products. The oil industry has made a great contribution to the traveling public by supplying free road maps but so far the oil industry, aside from an individual company or so, has contributed practically nothing in effort toward making the car owners of the country want to use those road maps.

The Texas Centennial offers the oil companies of a very large portion of the country an opportunity to work for increased gasoline and motor oil consumption. The same thing is true, but to a smaller extent, for the exposition at San Diego, California and the Great Lakes Exposition at Cleveland.

Every oil man in the country stands a chance to profit at least to the extent of a few gallons by getting car owners to DRIVE to one or more of these expositions. Every person connected with every oil company, whether officer and owner, or employe and stockholder, should be selling the idea of automobile transportation to these big shows.

IN addition to selling more oil and gasoline and in addition to helping the car owner to find out for himself how cheap and comfortable and convenient traveling by his own car is, the oil industry, through this sales work, will be doing something for the large number of people interested in these expositions, something for the people of all Texas, for those of San Diego and southern California and for Cleveland, which should make those people say, "That is a mighty fine industry to help bring all those people to our show."

The oil industry's public relations can best be improved by doing good deeds for others and not by just extolling its virtues in a loud voice.

Revolt Against Refiners' Brands Is Brewing In Wisconsin

CHICAGO, April 20—A JOBBER revolt against handling refiners' branded gasoline is brewing in Wisconsin. A movement has been started to seek wider margins and to sell private brands.

Officers and directors of the Wisconsin Petroleum Association initiated the movement by urging Wisconsin jobbers not to sign or renew contracts to handle refiners' brands. They said that the granting of liberal advertising material by refiners is "bait" to get the jobbers to sign contracts.

The appeal action was preliminary to a state-wide jobbers meeting called for May 13 in the Loraine hotel Madison, when the discussion of jobber margins and private brands begun at a recent meeting of directors and officials of the association, will be continued.

Association officials adopted resolutions, charging that refiners would be willing to raise jobber margins except for an "agreement" with other major companies.

The Wisconsin resolution follows:

"Whereas, many of the independent jobbers in the Wisconsin Petroleum Association have requested larger margins in order to continue in business, the matter of jobber margins was thoroughly discussed and,

"Whereas, we have been reliably informed by many members of the association and other independent jobbers that representatives of their source of supply have stated on numerous occasions that their company would be very willing to increase the margin for the jobber but that they were duly bound by an agreement with other major companies to continue under the present margin and,

"Whereas, it appears as though an agreement has been formed by larger companies to refrain from increasing the margins, and

"Whereas, we are also informed by several jobbers that their source of supply has submitted to them elaborate plans for an advertising campaign but in order for the jobber to get this advertising he must renew his contract. It is the consensus of the officers and directors of this association that this advertising offered to jobbers is more or less of a bait to get them to renew or sign their contracts and that very few suppliers would refuse to grant the jobber this advertising regardless of whether he signs the contract or not, as they have their products to sell and are as much interested in advertising their brands, therefore, not signing the contract, the directors believe, will not curtail advertising offered the jobber.

"Therefore, be it resolved, that the Wisconsin Petroleum Association urge and suggest all independent jobbers in Wisconsin not to renew their contracts or sign any new contracts, regardless of who their supplier may be, until after the state-wide meeting of the Wisconsin Petroleum Association which will be held in Madison on May 13."

Consumer co-operatives will also be discussed at the May 13 meeting.

Herbert O. Caster

Guy Forcier Dies

ST. LOUIS, April 20—Guy S. Forcier, who was prominent some years ago as a refining company executive, and who lately has been in the oil brokerage business, died here recently from a heart attack.

Mr. Forcier entered the oil business with the former Island Petroleum Co., of Neville Island, Pittsburgh, in the early 90s. Then he became associated, at St. Louis, with John T. Milliken as vice president of his refining company and he became president upon Mr. Milliken's death. Later he was manager of a refinery at Wichita, Kans. He then entered the brokerage business in Chicago and later at St. Louis.

Cities Service Oil and Gas Official Dies

NEW YORK, April 14.—Herbert O. Caster, associate head of the oil and natural gas division of the Cities Service Company, died here today after several weeks illness. He was 64 years old.

At the time of his death Mr. Caster was an officer and director of the Cities Service Company and many of its subsidiaries. His first connection with the group was in 1919 when he was appointed general counsel of the Empire Gas and Fuel Company at Bartlesville, Okla. He came to New York in 1925 as an executive of the Cities Service Company. In 1933 he was elected president of the American Gas Association.

Mr. Caster was graduated from Ottawa University in Kansas and was admitted to the bar there in 1906. He later served as counsel for the Kansas Utilities Commission and practiced law in Topeka, Kansas for three years before joining the Empire company.

Avoid Panaceas in Revising Price Structure, Urged

CLEVELAND, April 17

THE marketing branch of the oil industry should be skeptical of any panaceas or of any sweeping policy involving a sudden and drastic change in its methods, in its readjustment of its gasoline marketing structure, W. T. Holliday, president of the Standard Oil Co. of Ohio, told the National Petroleum Association, in a talk on "Petroleum Marketing."

He pointed out that it was generally recognized that the industry had come into its present situation through a long period of widening and guaranteed margins, due both to the pressure of crude oil and to the rapidly expanding demand, with the resulting overexpansion of retail facilities.

He stated that it seems now to be more or less generally recognized that the economic trend for a correction of the present situation is a reversal of the process through which the industry came into its present dilemma; that is, through the narrowing of margins and the elimination of guaranteed margins.

He said that the extension of the so-called "Iowa plan," under which the oil companies in that state virtually retired from the gasoline retailing field, leasing their stations and supplying the operators with gasoline at the tank wagon price, seemed to be a manifestation of the present economic trend.

"It is to be borne in mind, however," stated Mr. Holliday, "that it is usually unwise to attempt to get ahead of or to hasten unduly an economic trend. It is perhaps significant that economics used to be called political economy. Certainly there is a political aspect of economics today, and it is not good political economy to precipitate economic changes or to help them to be so sudden that orderly processes of human adjustment to the change are made impossible.

"The increase in consumption reasonably to be expected in the next few years can help in the orderly readjustment and a gradual narrowing of margins can permit of an orderly readjustment to the objectives of the economic forces at work. In short, the reversal of trend about which we have been speaking can be either an orderly retreat, or it can be a disorderly rout."

MR. Holliday urged oil marketing company executives to look upon their problem as a series of individual cases, each to be studied in the light of its particular circumstances, yet linked together with a view of the economic trend and the ultimate objective of the economic forces which are at work. Every effort should be made, he said, to maintain the spirit of frankness and mutual tolerance among members of the industry which was fostered by the code.

Mr. Holliday challenged the statement that the Iowa plan is the only answer to the industry's gasoline marketing problem. Some executives had assumed, he said, that the tank wagon and tank car prices for gasoline would be held inflexible, despite the pressure upon them as the jobbers and dealers determined their own margins. He stated his disbelief there could be a general and extended decline of the retail price, without a depressing effect upon the entire under-structure of prices in the industry.

If a brand supplier finds that his jobber or dealers in a given locality are suffering by the narrowing of the spread between the wholesale price and the actual realized retail price, said Mr. Holliday, it is well known that that supplier will maintain his distribution either by an open reduction of his wholesale price, or by a secret subsidy. History indicates, he said, that secret subsidies cannot become very general without being met by a decline in the price which is affected.

In the early part of his remarks, Mr. Holliday outlined the conditions which to his mind have led to the present gasoline marketing situation, including its wide margins and its guaranteed margins.

Guaranteed margins both to jobbers and dealers, with everwidening margins, were the outstanding characteristics up to about 1929, he said; and, since they were written for a definite margin and for a definite time, their inflexiblity prevented the oil companies as of any given date starting to narrow the margins. Competition also, Mr. Holliday pointed out, forced the general maintenance of margins as wide as the widest in the marginal contracts extant. Secret discounts, coupon books, commercial discounts and various manner of special concessions resulted from the wide margins, he pointed out.

Mr. Holliday said that margins had tended to narrow prior to the NRA but that, during the NRA period, they tended to widen again and were maintained until the last months of the code, through the more or less general adherence to posted prices. Before the code was terminated through the U. S. Supreme Court's decision, however, he said there was a cumulating increase in secret discounts and concessions of all sorts.

Another effect of the NRA, he brought out, was increased marketing costs due to code hours and wages, which made impossible the operating of many salaried service stations, and these were leased out to independent dealers. This, with the influence of the chain store taxes, led to the leasing out of service stations formerly operated by brand suppliers, Mr. Holliday stated, until the net result today is that probably 90 per cent of retail sales of gasoline are made through jobbers and dealers. This situation, he brought out, would make in-

effectual the signing of a new marketing code by the larger companies because they cannot control the practices of the people who are actually selling their branded goods.

The present marked increase in the building of new and more extensive service stations is putting additional pressure upon the old dealers to hold their gallonage through secret concession, he brought out. Due largely to the general opprobrium, under the code, of suppliers leasing existing dealers' stations, vacant properties are now being improved and leased to new dealers. Thus the contest among old dealers is intensified with the additional pressure upon this type of dealer to give discounts to hold their business.

U.S. Crude Oil Output

Nears New Record

NEW YORK, April 21. — With output increasing in all of the country's more important producing districts, except California, daily average crude oil production increased 45,150 bbls. in the U. S. last week, according to a report of the American Petroleum Institute. The country's output totaled 2,935,200 bbls. on daily average, or within 30,000 bbls. of the all-time peak production of 2,965,400 bbls. recorded in the week ended Sept. 14, 1929.

The largest increase last week was in Oklahoma where output jumped 20,000 bbls. daily average. Texas production was up 14,500 bbls. daily average.

Daily average crude oil imports were down 18,940 bbls.

The institute's estimates follow:

	Week Ended April 18 Barrels	April 11 Barrels
Okla. City	162,600	153,085
Total Okla.	569,700	549,700
East Texas	446,300	445,050
Total Texas	1,150,100	1,135,600
Rodessa	45,000	40,650
Total Louisiana	210,900	202,200
California	572,700	573,700
East of Rockies	2,362,500	2,316,350
Total U. S.	2,935,200	2,890,050
Crude Imports	104,860	123,850
Total New Supply	3,040,060	2,013,900

Gasoline Becoming a Commodity And Will be Sold as Such

CLEVELAND, April 17 GASOLINE, the backbone product of the petroleum industry, is becoming a commodity instead of a specialty, President C. L. Suhr told members of the National Petroleum Association at their 33rd semi-annual meeting in Cleveland April 16 and 17.

To distinguish the two terms, he defined a commodity as a product of general consumption, sold under commonly accepted specifications, developed through long usage. Its selling price is governed by the law of supply and demand and is quoted daily or even hourly in market prices. The source of manufacture of a commodity is of no particular importance to its final purchaser.

A specialty he defined as a product which, by reason of its individuality, commands a higher price not seriously affected by the law of supply and demand. Its source of manufacture is generally quite important in the eyes of the purchaser.

MANY products handled today as commodities began their commercial careers as specialties. As years passed, manufacturing processes approached standardization, and they became commodities. Gasoline is going the same way, said President Suhr. Although advertised as a specialty and distributed as such, it is priced as a commodity, manufactured as a commodity, and it performs as a commodity, he said, since a preference feature lying within the product itself cannot be found.

The gasoline marketer has developed a sort of synthetic preference, he went on, by cloaking his service station with the architectural atmosphere of a sort of Taj Mahal and a service atmosphere akin to that used by Pullman porters. Present day elaborate systems violate every principle of retail merchandising, he said, except that of convenience and display.

Drawing an analogy with the retail grocer, he believes that the grocer would regard oil marketers as "just plain crazy." The idea of handling a single brand would be scorned and, if customers actually buying merchandise were present only 20 per cent of the time, the grocer would throw up his hands in despair.

Mr. Suhr predicted that, if it is true that gasoline is well on its way toward becoming a commodity and if it can be furnished to the public under another system of retailing at half our current retailing cost, the present system will be replaced by one involving handling several brands and operating on the same economical basis as a well-run grocery store.

Regarding the general situation of the industry, he paralleled the oil industry with the railroads in the 80's of the last century. Unable to save themselves from the ravages of vicious rate wars, rebates, and other destructive practices, they went under rigid government regulation. If the oil industry fails to recognize this inevitable trend, it will be recognized for the industry, he said. The industry may still have an opportunity now to make a choice but that opportunity will not always be open, he concluded.

The discussion of Joseph Geschelin, technical editor of Automotive Industries, on diesel engines, was reviewed in the April 15th issue of NATIONAL PETROLEUM NEWS. A statement there that "diesel-equipped vehicles are giving almost as much mileage per gallon of fuel" as the Otto cycle should be corrected to read almost twice as much mileage. Mr. Geschelin was followed by T. R. Kelly, diesel field engineer of the Waukesha Motor Co., who continued the discussion.

Mr. Kelly was in close agree-

ment with most of Mr. Geschelin's statements. He called attention to a few additional reasons for using the diesel, in addition to lower fuel costs. One was that diesels have higher torque for a given size engine and will maintain speed on hills and mountains and keep from blocking roads. By so doing the diesel engine gives performance savings. Its lower volatility of fuel is of value in hot climates and the long mileage for a tank of fuel carry trucks over territory where filling stations are far apart and where a premium is frequently charged for fuel when they are to be found.

With regard to the less heat rejected to the cooling system, Mr. Kelly said this applied for equal power but that, in replacements with diesel engines, advantage was taken of their greater power so that sometimes existing cooling systems were inadequate.

The National Social Security Act was discussed by Hon. J. G. Winant, chairman, Social Security Board, who was followed by R. G. Harder, Shell Petroleum Corp., discussing some of its problems to the oil industry. Arthur E. Pew of Sun Oil Co., then took the stand and asked a number of pertinent questions including who would pay, why industry should be forced to take a government policy in preference to any other, and questioned the wisdom of large accumulations of capital by the government.

Arthur Gow, of the Curtis Publishing Co., told marketers to advertise the joys of motoring if they wanted to sell more gasoline. Tell people where to go on week-end trips, he said, just as the railroads, the bus lines, and the air lines are profitably doing and the result is bound to be more sales of gasoline. Up to the present a market has been created for the industry without it having to do anything about it. It has grown without effort but now it has come time to promote travel on the highways, said the speaker.

A prediction of the recovery of private flying was made by J. H. Geisse, director of the Aeronautics Development Section of the U. S. Bureau of Air Commerce. The most important indication of this was said to be found in the airplane itself and in flying facilities. Tremendous advances have been made since 1929 in the improvement of the airplane in utility, safety and comfort.

Although press accounts of accidents set back development, it should be remembered that the term airplane is like the term boat in that it includes flat bottomed scows and canoes. Accidents in the air have been in the tricky canoe-like crafts or old outmoded airplanes, said the speaker.

IN one airplane on which the Bureau has just taken delivery, stability in the air, visibility and control were said to be so simple that the airplane can be taken off, flown, and landed with little or no previous training.

The cost of airplane engines has been in the past ten times as great as automotive engines. This is shortly to be cut to only four times the latter, said Mr. Geisse.

Barring a redistribution of purchasing power, one of the greatest needs of this country has been the development of some new commodity to appeal to those who have an income surplus. That private flying offers such a commodity, was one of his concluding remarks.

The last speaker on the general program was E. C. Alvord, formerly assistant legislative counsel and special assistant to the Secretary of the Treasury, in a discussion of federal finances and taxation. His stated object was to give a few facts which in themselves would propound a few questions. The principal facts appeared to be the direction that federal indebtedness is taking and the possibilities for removing the debt load. He pointed out that drastic action is necessary to the latter end and cannot be postponed.

Since 1930 and continuing through the 1937 budget expenditures have been greater than receipts, he brought out. The public debt will have climbed to an all-time high of over 37 thousand million dollars, nearly $300 for every person in this country. During 1936 the government has been spending $1.83 for every dollar it has taken in, said Mr. Alvord.

The great paradox of American recovery, he said, is the rise of relief expenditures in the face of consistent and continuing improvement in the economic situation. Industrial production is up 26 per cent, construction contracts are up 24 per cent, factory employment 14 per cent, factory payrolls 33 per cent, and national bank deposits 41 per cent. Despite these striking gains, the first nine months of the current fiscal year have increased relief payments approximately 40 per cent.

The proposed tax plan is unworkable and impractical in Mr. Alvord's opinion. He suggests changes whereby expenditures would be fixed for any one year to a maximum under which all appropriations and authorizations must be kept. He suggests finally that the budget be balanced, honestly and actually, by eliminating all waste and by revising our revenue laws fairly so as to possess maximum productivity and include adequate provisions for the retirement of debt.

U. S. Crude Stocks Cut

1,137,000 Barrels

WASHINGTON, April 20.—Following a five-week climb, crude stocks during the week ended April 11 fell off 1,137,000 bbls., making the total 311,837,000 bbls., the Bureau of Mines reported today. East Texas stocks dropped 1,034,000 bbls.

Grade of Crude	April 4	April 11	Change
	(Thousands of barrels)		
Penna. Grade	4,140	4,155	+ 15
Other Appalachian	907	960	+ 53
Lima-NE Ind.-Mich.	1,242	1,226	— 16
Ill.-SW Ind.	10,474	10,558	+ 84
N. La. and Ark.	9,882	10,007	+ 125
W. Tex., SE N. Mex.	28,815	28,486	— 329
East Texas	21,705	20,671	—1,034
Other Mid-Continent	127,840	127,906	+ 66
Gulf Coast	26,023	26,505	+ 482
Rocky Mountains	26,572	26,503	— 69
California	35,629	35,080	— 549
Foreign	3,045	3,130	+ 85
Total reptd. wkly.	296,274	295,187	—1,087
Estimate of unreported wkly.	16,700	16,650	— 50
TOTAL	312,974	311,837	—1,137

Burner Institute Committee To Co-operate With A.P.I.

DETROIT, April 17

CLOSER co-operation between the petroleum and the oil burner industries is to be sought. The Oil Burner Institute meeting this week at Detroit appointed a permanent committee to co-operate with the American Petroleum Institute in increasing public acceptance of oil for fuel, and to promote improvement of burner equipment and fuel.

Members of a permanent committee representing the Oil Burner Institute to co-operate with the A. P. I. are W. F. Brannan, Anchor Post Fence Co., Baltimore, and new burner institute president; J. L. O'Brien, Cleveland Steel Products Corp., Cleveland; F. H. Dewey, Gar Wood Industries, Detroit; Earl Marr, Westinghouse Electric Supply Co., New York; J. J. Donovan, General Electric Co., New York; H. F. Tapp, Gilbert & Barker Mfg. Co., Springfield, Mass.; F. H. Van Blarcom, Lynn Products Co., Lynn, Mass.; A. J. Fleischmann, May Oil Burner Corp., Baltimore; M. F. Cotes, Motor Wheel Corp., Lansing, Mich.; E. P. Bailey, National Airoil Burner Corp., Philadelphia; J. H. O'Brien, Petroleum Heat & Power Co., Stamford, Conn.; and M. A. Powers, Timken Silent Automatic Co., Detroit.

A complete survey of petroleum and oil burner equipment statistics was submitted to the burner institute's board of directors and will be made public soon.

SEVERAL thousand burner distributors from all over the country moved into Detroit during the week to view burners and appliances of manufacturers on display at the institute's oil burner show, and to listen to addresses on selling and merchandising of automatic oil heat.

For the petroleum industry there was an added interest in the attitude and predictions evident throughout the show and speaking program of the continuing rise of burner installations and the increasing market for burner oils.

The oil burner show was open to distributors and the general public from Tuesday through Saturday. Attendance through Thursday, Leonard Fanning, public relations director, said was 2000 distributors, and 8000 from the general public.

While distributors were interested in the show members of the institute were holding meetings and W. F. Brannan, Anchor Post Fence Co., Baltimore, was elected president, succeeding W. F. Smith, Cleveland Steel Products Corp., Cleveland. Mr. Porter was reelected managing director and secretary, and C. F. Curtin, assistant secretary.

During the speaking program Frank E. Spencer, Spencer Petroleum Co., Chicago, and a leader in the Chicago oil heat campaign, explained in detail efforts and achievements of fuel oil distributors in combatting advertising programs in Chicago for gas and coal heat.

The trend in burner selling from an engineering to an inspirational approach was forecast by R. S. Beale, Norge Corp. The "engineering mind" has its place on installations and service, he said, but enthusiastic salesmen are needed for selling.

Manufacturers have been more interested in production than in sales problems, he continued. Too little time also is spent in schooling salesmen, Mr. Beale said, while the manufacturer spends his funds for tooling the plant but not in production of customers for his product.

Price, he informed distributors, plays only a small part in selling according to a survey made by his company. The reasons why prospects buy, in order of importance, he gave as economy, convenience, dependability, heating efficiency, reputation of the manufacturer, reputation of the dealer.

Other speakers were T. L. Barnard, N. W. Ayer & Son, and W. C. Wood, Timken Silent Automatic Co.

Nine new members were elected by the burner institute during the week, bringing total membership to 37 companies, representing 75 per cent of the production of home oil burners. by 17 accessory manufacturers, and 12 companies in allied trades, technical associations, and trade publications.

G. Harry Porter

W. F. Brannan

"Alky-Gas" Inefficient Motor Fuel Leading Chemists Bring Out

By ARCH L. FOSTER
N. P. N. Staff Writer

KANSAS CITY, April 17

IT WILL require 160 gallons of alcohol motor fuel to give the same power output in an automotive engine as 100 gallons of gasoline, according to findings of American chemists presented before the American Chemical Society here this week.

In other works, using a 10 per cent alcohol blend with gasoline, the automobile driver will need 105 or 106 gallons of this blended fuel to go as far as he can with 100 gallons of straight gasoline.

If all the technical data now available is made use of and if the engine and fuel systems are redesigned to take full advantage of this information, the greater number of the mechanical difficulties in using alcohol motor fuels could be overcome, some chemists believe.

Overcoming the economic difficulties, however, offers the most insurmountable difficulties, and no prospects are in sight which will solve this phase of the problem, the chemists decided.

When it requires 60 per cent more alcohol by volume to obtain the same power output, and when the manufacturing cost of alcohol is five to 10 times that of gasoline, the economic unbalance appears to be well nigh hopeless under present methods of manufacture and no radically new methods for reducing the cost of making alcohol appear to be possible in the immediate future, as far as leading chemists of the country can determine.

Two distinct steps are required in the polymerization of paraffinic hydrocarbon gases; namely, dehydrogenation followed by polymerization, according to Dr. Gustav Egloff, of Universal Oil Products Co. Employing catalysts, dehydrogenation of paraffins takes place readily, Dr. Egloff stated at 950 F. and atmospheric pressure, producing a 90 per cent yield of olefins, which may be, and now is, catalytically polymerized at 450 F. and 200 pounds pressure, over a phosphoric acid catalyst. The nature of the dehydrogenating catalyst was not disclosed.

Dr. V. N. Ipatieff, the famous Russian authority on catalysts, has found that propylene may be catalytically polymerized at high pressures and 625-700 F., with phosphoric acid, to produce a series of paraffinic, olefinic and aromatic hydrocarbons of higher molecular weight, with 22 per cent of cyclic hydrocarbons. Thermal polymerization under these conditions does not produce aromatics (benzene-type hydrocarbons) but forms 66 per cent of cyclic compounds.

POLYMERIZATION forming a series of different type compounds Dr. Ipatieff proposes to call "Conjunct Polymerization," to differentiate it from pure polymerization, such as the formation of iso-octene to butene. Propylene polymerizes catalytically with much greater ease than ethylene, he finds. Ethylene forms alkyl substituted benzenes by catalytic polymerization and subsequent destructive hydrogenation of the main polymer fraction.

In presenting the results of alky-gas studies, by the U. S. Bureau of Standards, O. C. Bridgeman, of the bureau staff, states that alky-gas blends have no material advantage over pure gasoline, although the blends can be utilized satisfactorily, provided full advantage can be taken of all available technical information.

Small percentages of alcohol are more usable than larger percentages, he finds, for engine starting, acceleration, and maximum power; for vapor lock avoidance, and in consideration of the amounts of water which may be permitted in the blend, larger percentages of alcohol are more satisfactory. Blending alcohol must be essentially anhydrous to produce a stable blend, even when using a blending agent, unless large percentages of the agent are used.

A carburetor setting about midway between the air-fuel mixture ratios which are best for pure gasoline and those for alky-gas blends of 10 to 20 per cent alcohol is about the average setting for passenger cars throughout the country, Bridgeman finds. The air-fuel ratio for maximum power for gasoline is about 14:1; for 10 per cent alky-gas blends, this ratio is about 10:1. Most carburetors are set at approximately 12:1, and under these conditions little difference is found in the general performance of the two fuels.

In an exhaustive road test on these fuels in 1933, the Bureau investigators found that the acceleration of some cars was better with the blend, others showed equally better acceleration with gasoline alone. The same is true with fuel consumption. Dr. Bridgeman finds there is little difference in fuel consumption of the blend and of gasoline except when the carburetor is set at nearly the optimum ratio for one fuel or the other; or when driving in very hot weather when large amounts of vapor are formed in the fuel system with one or the other fuel.

In the Bureau tests three years ago, the average gasoline consumption in gallons per mile was 0.0629; for 10 per cent alky-gas blends, 0.0631. The drivers in these tests reported a slightly lower acceleration rate with the alky blends. This loss in acceleration, and increase in consumption is increased some-

what with a 20 per cent blend, and is accentuated markedly with 40 per cent of alcohol in the fuel, it was discovered.

For the same degree of acceleration, the alcohol blend showed three to four per cent loss in acceleration. If knock is to be avoided, a wider throttle opening can be used with the alky-gas blend before the knock occurs, giving higher power and better acceleration, but at the expense of greater fuel consumption.

The octane number of pure ethyl alcohol is about 90, Dr. Bridgeman reports (Egloff & Morrell report 94). When 10 per cent is mixed with regular grade gasoline of 65-70 octane number, the octane number of the blend is raised three to five numbers; the increase is less with premium fuel, and may be as high as 10 octane numbers when blending third grade fuel, he states.

After comparing small differences in performance between the two fuels, Dr. Bridgeman sums up his conclusions: "No matter what gain in performance can be obtained by raising the compression ratio with alcohol blends, a still greater gain in engine performance per gallon of fuel consumed will be obtained by using a gasoline of suitable octane number in the same equipment."

In other words, no matter how good the alky-gas, a pure gasoline of similar octane rating will give lower fuel consumption and better performance. Starting with alky blends is slightly better at air temperatures of zero and above; at minus ten and below, starting with blends is much worse. Also, alcohol raises the vapor locking tendencies of gasolines, increasing the vapor pressure 0.7 to 1.0 pound Reid when used in 10 per cent blends, it was reported.

Comparing the engine performance of gasoline at a 5.45:1 compression ratio, and of alcohol at an 8:1 ratio, the pure 95 per cent alcohol will require theoretically 35 per cent more fuel by weight, and 31 per cent more by volume to equal the gasoline performance, L. C. Lichty and E. J. Ziurys, of Yale University, find. However, the comparison is even worse for the alcohol when the same compression ratio is used and with the air-fuel ratio adjusted for the best performance for each fuel.

The alcohol requires 60 per cent more by weight, and 56 per cent more by volume, to give equal performance with gasoline. Alcohol-air mixtures are lower in temperature for the same vaporizing conditions; when the additional heat is added to give the same mixture temperatures in the manifold, the gasoline will show about two per cent more power at the maximum; with the same heat input to the mixture, i.e., with the alcohol-air mixture at a correspondingly lower temperature, the alcohol should show 8.6 per cent more power, these investigators find.

The maximum power at wide open throttle which they find is about the same at all speeds, and optimum conditions for each fuel. This maximum power is about three per cent more for the alcohol at 2000 r.p.m., and about one per cent better for gasoline at 3000 r.p.m. Under a two-thirds load, the gasoline shows about three per cent higher power at low speeds, that is, 1000 r.p.m.; the alcohol about five per cent higher at 1500 r.p.m. This averages about two per cent better power at all loads for alcohol, a difference which Lichty states is not more than the experimental error of determination.

Operating a C.F.R. engine at compression ratios of 4:1 to 8:1, and a regular Chevrolet engine at 5.45:1, Lichty and Ziurys found the following specific fuel consumptions in pounds per h.p. hr., with the nearly theoretically correct air-fuel ratio for each, for 95 per cent alcohol and for the regular grade of gasoline as sold by Socony-Vacuum Oil Co. locally at the time of these tests. The gasoline was increased in knock rating to that of the alcohol with three cc. of lead tetraethyl, and by the addition of lead and anilol, for use at the higher ratios, such as 8:1.

It is interesting here to note the findings of the Austrian Petroleum Institute, as reported today by Egloff and Morrell. That body "concluded from a comprehensive survey which they made, that with each intake stroke of an engine, a greater amount of alcohol than gasoline input is necessary for the same energy content."

To produce enough alcohol to make a 10 per cent blend with the 19.5 billion gallons of gasoline produced annually in the United States would require 1,800,000,000 gallons of alcohol,

Leading Chemists Against "Alky" Blends

When the great majority of the chemists speaking before the American Chemical Society, greatest chemical organization in the world, decide that the use of alcohol in motor fuels is unprofitable, inefficient, and is in effect a governmental subsidy of the alcohol industry, the decision is momentous enough to demand the serious consideration of layman and chemist alike.

Some of the points against "alky-gas" are:

1. Alcohol fuel requires 60 per cent more fuel to obtain the same power output as does gasoline.

2. The higher knock rating of alcohol is useful mainly to improve the knock quality of the poorest or third grade gasolines.

3. Alky-gas fuels are very likely to separate in storage or gas tank, making trouble for the motorist, and the oil company.

4. Alky-gas will absorb water from the air during storage or use, causing separation and trouble.

5. Alcohol can be made more cheaply from still gases than from corn.

6. The cost of 10 per cent alky blends, using alcohol made from corn, will be about 5 cents per gallon higher to the motorist.

7. No known processes will reduce the cost of making grain alcohol from farm products to a price competitive with gasoline.

8. The enforced use of alcohol in motor fuel constitutes a subsidy of the alcohol industry at the expense of the already over-tax-ridden motorist.

9. If alcohol is a superior fuel, its superiority can be proved in competition and without legislative crutches.

Comparative Fuel Consumption in Pounds Per Horsepower-Hour and Per Cent

Fuel	Air-Fuel Ratio	Single-Cyl. Engine Lbs. of Fuel	Single-Cyl. Engine Per Cent	Multi-Cyl. Engine Lbs. of Fuel	Multi-Cyl. Engine Per Cent	Increase over Cyl. Engine Per Cent
Alcohol	7:1	0.75	159	0.86	162	14.7
Gasoline	12:1	0.47	100	0.53	100	11.3

Egloff and Morrell point out. At the optimum yields claimed by the alcohol advocates, 2.7 gallons per bushel, this would consume 666,670,000 bushels of corn, they found by calculation.

At the probable cost of alcohol by known processes the use of alcohol will add up to five cents per gallon to the cost of the finished fuel. Furthermore, if the gasoline tax is remitted only on the alcohol content of the fuel, this would eliminate only about one cent of the additional fuel cost to the consumer.

To compete with alcohol at this cost, if necessary, the petroleum industry can produce by known and proved processes seven billion gallons of alcohol each year from the 300 billion cubic feet of cracked gases available in refineries, or a billion gallons more than could be made from the entire American corn crop.

One of the greatest problems with alky-gas fuels is that of transportation, storage and use of this blend. In 1920 an American oil company distributed an alky-gas blend in Maryland, but found that, after a few months, its sale must be discontinued because of operating difficulties, especially with separation of the components.

Although such blending agents as acetone, strongly basic amines, benzol, normal butyl alcohol, fatty acids, heptalin and hexahydrophenol are used successfully and increase the water tolerance of the blend, troubles have invariably arisen from the tendency of the blend to absorb water after formation, even with completely dehydrated alcohol used in blending.

Dr. Leo M. Christensen in a paper given at the meeting stated that "the old fear that it (anhydrous ethyl alcohol) was strongly hygroscopic has been entirely dispelled". However, later in the same paper he showed by curves that a 10 per cent alky-gas blend exposed in an Erlenmyer flask absorbed water equal to more than two per cent of the alcohol present, in 15 days with 50 per cent air humidity, even when using a vent to the atmosphere of only two millimeters, or about 1/12-inch diameter. At 100 per cent air humidity the absorption rate more than doubled.

Only about one per cent of water in the blend can be tolerated in winter, Dr. Christensen said, with a maximum of about three per cent in summer (higher in summer because of higher average temperatures increasing the water tolerance), in five to 20 per cent blends. During discussion about the meeting it was brought out that, during the 1933 Bureau of Standards tests, a five-gallon can with a four or five-inch diameter mouth sat for a few hours in the open. The blend separated completely during that time and with that small degree of air exposure, although absolute or water-free alcohol was used in making the blends, and the work was under the direction of very experienced investigators, intent on an impartial test throughout.

Egloff and Morrell, and others as well, pointed out that water collects in every motor fuel storage tank, from sweating and breathing of the tank, humidity and temperature changes and from small amounts of water in the gasoline as it comes from the refinery rundown tanks. This water in the tank bottom continues to increase, as loading pipes do not extend entirely to the bottom. To avoid unpermissible amounts of water getting into the blended fuel, continual cleaning of tanks would be necessary, the chemists stated.

Dr. Christensen pointed out that the Bureau of Standards found a lower mileage for alky blends, but questioned the results reported, because: "There were difficulties with vaporization of the fuels in the lines, and results were very erratic." Questioning the technical intelligence and the honesty of conclusion of an organization of the standing of the Bureau of Standards should be based on far more exact information.

Alcohol is an excellent solvent for gums found and formed in automotive fuel systems, and also for removing carbon from the engine, Dr. Christensen says. This solvent action, he states, sometimes causes trouble by loosening gum in fuel systems in which gasoline has been used, the gum then clogging the system. No abnormal corrosion of fuel systems by alky blends has been experienced in Sweden over a considerable distribution period, he finds from Hubendick, the Swedish technologist. Both methyl and ethyl alcohol will react with aluminum and magnesium, he states, and there is a possibility of corrosion of these metals if used in an engine employing alcohol-containing fuels. Acetic acid formation from alcohol may also cause corrosion of metals such as copper, Dr. Christensen pointed out, though likely this will happen, he says, when the fuel has a very high percentage of alcohol. He stated also that, from the rather wide distribution of alky blends in the midwest during the last year or two: "No case of separation (of alcohol from gasoline) either in storage or in use has been reported."

Polymerization of Ethylene, Propylene

Propylene polymerizes more easily in the presence of phosphoric acid than does ethylene, Dr. Ipatieff finds in his exhaustive researches on the reactions of various low molecular-weight olefins. On the other hand, ethylene polymerizes by thermal methods more readily under less severe conditions than does propylene, he finds. At 625 F., propylene polymerizes only negligibly while ethylene reacts easily at that temperature. A large proportion of cyclo paraffins is formed in each case. With a catalyst, ethylene forms mainly paraffins, cycloparaffins and aromatics. Propylene polymerized

catalytically forms the products in percentages as shown in the following table, showing the results of Ipatieff's work.

Hydrocarbons Formed By Polymerization of Propylene

	Thermal %	Catalytic %
Paraffins	8	15
Olefins	26	63
Cycloparaffins	44	10
Cyclo-olefins	22	6
Aromatics	0	6

Polymerizing propylene in an autoclave with phosphoric acid catalyst showed a yield of better than 90 per cent of liquid in the gasoline boiling range. Thermal polymerization of the same material at about 700 F. and 475 pounds for 12 hours showed a yield of about 89 per cent of the propylene charged, the product consisting chiefly of paraffins, olefins and naphthenes in the lighter fractions, and cyclo-olefins and naphthenes in the heavier fractions.

Heating ethylene of 98 per cent purity in a tube surrounded by a metal bath at 565 F. to 615 F., the tube being loaded with phosphoric acid catalyst, showed yields of 65 to 73 per cent liquid polymer, the higher yield being obtained at the lower temperature and 790 seconds contact time, as against the higher temperature and 320 seconds contact time for the lowest yield. The yield of gasoline per 1000 cu. ft. of gas was about 4.6-4.7 gallons, about eight gallons of liquid being produced. The end point of the polymer liquid was from 625 to 645 F., about 60 per cent of which is in the gasoline range. Dr. Ipatieff finds that raising the temperature 50 F. practically doubles the reaction rate; his results are reported on once-through operation. Recycling raises the yield to better than 90 per cent of the charge.

Hydrogenation of the ethylene polymer liquid yielded the following percentages and types of products. It is notable that ethyl substituted benzenes predominate in the final product.

Fraction No.	Boiling Point °C.	Boiling Point °F.	Aromatics* %	$N^{20}D$	Mol. Wt.	Analyses, % C	Analyses, % H	Products
1	170-205	338-401	50	1.4681	135	87.8	12.4	$(C_2H_5)_2C_6H_4$(60%) + C_nH_{2n}(40%)
2	205-225	401-437	50	1.4862	149	88.2	12.0	$(C_2H_5)_2C_6H_2$(70%) + C_nH_{2n}(30%)
3	225-240	437-464	75	1.4936	161	88.2	11.9	$(C_2H_5)_4C_6H_2$(90%) + C_nH_{2n}(10%)

*Determined by solubility in fuming sulfuric acid (15% SO_3).

Sulfur Effect on Lead Response

The effect of sulfur on the lead response of motor fuels varies widely according to the findings of S. F. Birch and R. Stansfield, of the Anglo-Iranian Oil Co. of London, England. Their work confirms essentially that of Schulze and Buell (See Nat. Pet. News, Oct. 9, 1935, page 25). It was found that 0.20 per cent of sulfur as disulfides reduced the effect of three cc. of lead in 65 octane number gasoline from 19 numbers for the sulfur-free fuel to eight octane numbers for the same fuel with the 0.20 per cent sulfur.

One-tenth per cent sulfur as ethyl trisulfide reduced the lead response of Venezuelan gasoline from about 18 octane numbers for three cc. of lead to 11 octane numbers. The following compounds reduce lead susceptibility in increasing degree in the order named; thiophene, sulfide, mercaptan, disulfide, trisulfide, and thio-glycol.

Ignition quality, volatility and viscosity make up the triumvirate of properties governing the quality of diesel engine fuels, according to G. D. Boerlage and J. J. Broeze, of the Delft, Holland research laboratory of the Shell interests, in a paper presented before the meeting by A. G. Marshall of the Shell Laboratory of California. Of these properties, viscosity is doubtless the least important, the authors state. High ignition quality is very important, but the use of too high cetane number fuel may result in poor consumption and power output they indicate. The best procedure is to compare fuels with reference fuels, cetene or cetane as final decision on the test method may be made. These authors find none of the calculated "indices" of ignition quality sensitive enough to differentiate between, for example 40 and 50 cetene number fuels. A suitably volatile fuel will largely govern the after-burning trouble which is frequently met in diesel operation; they suggest that this quality be controlled by the 65 per cent distilled point in the A. S. T. M. distillation for lighter fuels, and the Conradson Carbon test for fuels containing residual oils.

The Timken Film Strength value of an oil containing a chlorine-bearing organic "oiliness" agent is of value in the preliminary selection of addition agents, B. H. Lincoln, G. D. Byrkit and W. L. Steiner, of Continental Oil Co. have found. However, this value is only one of the many factors to be considered in the choice of such an agent, they state. Service tests are the final criterion of value for addition agents. The authors have developed what they term the Timken Index, for comparing the values of addition agents.

This formula is Timken Index $= \frac{A - B}{C}$ where

A = Timken film strength of a one per cent blend of the given material;

B = 8.5, film strength of Mid-Continent base SAE 30 motor oil;

C = Per cent of chlorine in the addition agent.

To Change Federal Bid Requirements

By Teletype

WASHINGTON, Apr. 21.—In its next call for bids to supply federal gasoline requirements, which will go out shortly, the Treasury Procurement Division will ask for bids on a three, six, nine and twelve-month basis, it was learned today. Bidders who offer attractive prices for periods longer than three months probably will be awarded the contracts, it is understood.

Among the changes in bid forms, it was learned, is a requirement that all bids on cities and zones in states comprising Region 1 (East) and in Virginia, North and South Carolina, Tennessee, Arkansas and Louisiana must be based on consumer tank car price for tank wagon delivery. In all other states, the posted price quotation for tank wagon delivery

must be based on consumer tank wagon price.

Because previous bid-openings have indicated that there is seemingly a trade custom to bid for government tank wagon gasoline business on the basis of a differential added to or subtracted from posted tank car price, the Treasury Procurement Division has decided to require that all bidders conform to this method of bidding.

It apparently means that bids for items in Region 1, and the other states listed which quote a price for tank wagon delivery based on posted tank wagon price will not be considered. Similarly, in all other states it is understood that bids based on tank car prices for tank wagon delivery will be rejected.

If the bidder himself does not "publicly post" a consumer tank car price or consumer tank wagon price (depending on which state he is bidding on) he will be required to base his bid on the consumer tank car price or consumer tank wagon price as publicly posted by a marketing company operating in that territory. In such instance, the bidder will have to name the marketing company and the place where the price is publicly posted, so that the government will know how the deliveries are to be billed.

The zone system will be used again, with bids being asked separately on the 46 cities which for the April-June quarter were lifted out of their respective "zones." (See NPN Feb. 12, 1936, page 24, for list of cities).

Rodessa O. & R. Buys Crystal Refinery

SHREVEPORT, April 18.—Announcement has been made of the purchase by Rodessa Oil & Refg. Co. of the Shreveport properties of the Crystal Oil & Refg. Co. The Rodessa company has been operating the Crystal refinery for some time under lease with option to buy.

Cracking and reforming units are under construction at the plant and are expected to be completed during the latter part of June. Cracking unit will have a capacity of 2800 bbls. of gasoline daily. The refinery will run on Haynesville crude, which the company has contracted to purchase from Ohio Oil Co.

Big Companies Buy Rodessa Leases

By Teletype

April 20.—Purchase of producing properties in the Rodessa field by Magnolia Petroleum Co. and by the Standard Oil Co. of Louisiana puts the greater part of that field in the hands of the large companies.

Magnolia bought approximately 5200 acres from R. W. Norton, with 18 wells, eight of them jointly owned with United Gas Service Co. Norton retains some acreage in north Louisiana and eastern Texas, but active properties in the Rodessa field all were included in the sale.

Standard's purchase gave it all the Rodessa field holdings of Haynes Production Co. All the stock of the company was bought and the properties thus acquired included approximately 3500 acres, on which are located 34 oil wells and one gas well. The properties, on the basis of one well to 10 acres, are completely developed.

In neither case was the consideration made public. Both the Standard and the Magnolia have pipelines into Rodessa.

Wins Right to Drill On State Land

By Teletype

TULSA, April 21.—Decisions of district courts in Oklahoma City, Monday, unless reversed by the State Supreme Court, mean that the city is powerless to regulate development within the city limits, according to the municipal counselor.

In one court decision was rendered that K. & L. Petroleum Co. may continue with drilling on an unzoned tract southwest of the state capitol. This location was made several weeks ago and derrick put up. The city asserting that it had the authority over the operation to shut down the well. The district court held yesterday that the city had been arbitrary in its zoning policy.

At about the same time another district judge was handing down one of those opinions which give something to both sides. The city brought suit to set aside the operations on state land being carried on under protection of the national guard.

The court rebuked the governor and held that his use of military forces was illegal, but held also that the state had never surrendered to the city the authority to restrict use of state land. The governor emerged from this court battle the biggest winner.

State College Research Results Patented

STATE COLLEGE, Pa., April 18.—Issuance of U. S. Patents 2,037,318, and 2,037,319, to M. R. Fenske and W. B. McCluer, and 2,037,125 to M. R. Fenske, mark the progress of the first phase of the comprehensive petroleum research program which has been under way during the last three or four years at State College. Devoting attention primarily to Pennsylvania petroleum and its problems, the efforts of the staff have been directed toward the two-fold program of production geology and engineering, and of refining technology.

The first two patents above mentioned deal with the use of solvents for extracting mineral oils. The first embraces broad claims covering the mixing of any two liquids; the second deals specifically with the mixing of three liquids, as two solvents and a mineral oil component, especially in a counter-current flow system.

The third patent refers to a vacuum control developed by Dr. Fenske. In his study of vacuum distillation and exact fractionation of petroleum liquids, Fenske found that the existing controls were not accurate enough for his purposes. This control has for some years maintained an absolute pressure of one millimeter of mercury, varying by plus or minus 0.01 mm., when used on the equipment at the College. It is applicable to practically any type of vacuum distillation work.

Merger of Richfield, Pan American And Rio Grande Companies Seen

LOS ANGELES, April 17 — DETAILS of the plan for reorganization of Richfield Oil Co. appear headed toward early completion along lines providing for consolidation of the Richfield, Pan American Petroleum Corp. properties with those of Rio Grande Oil Co., now jointly held by Consolidated Oil Corp. and Cities Service Co.

This was indicated by Harry F. Sinclair, chairman of Consolidated's executive committee, following negotiations as a part of, and subsequent to the "deal" made between Consolidated and Cities Service, whereby the latter turned over to Rio Grande its holdings of Richfield and Pan American securities and, in exchange, received a 50 per cent interest in Rio Grande.

The plan, which must be submitted to the Federal court for approval, is understood to be complete in all of the major details except for financing of the reorganized company and progress has been made in this to the point where another two weeks is expected to see the final form in the hands of the court.

Essentials of the plan are reported to contemplate the issuance of common stock, with all owners of securities of the receivership companies given an opportunity to participate. Under this arrangement will be included those owners of Richfield and Pan American bonds and unsecured creditors of the two companies, but no provision has been made for the Richfield common and preferred stock, which is looked upon as valueless and not to figure in the final disposition.

In addition to issue of common stock, which will provide the greater part of the reorganized company's capital, there will be an issue of debenture bonds. It is estimated between $35,000,000 and $40,000,000 will be provided for working assets to build a strong integrated unit with crude reserves and marketing distribution in the five western states where Sinclair Refining Co. does not now actively operate.

If the reorganization is consummated along these lines, western personnel of Richfield and Pan American will be retained, and the name "Richfield" will continue as the title of the new firm. A complete renovation of existing refining facilities, improvement of all other present properties and active development of existing crude oil properties is contemplated under the new set-up.

AN OPPORTUNITY for open bidding for the Richfield system will again be provided on April 30, before Federal District Judge W. P. James, in Los Angeles. This court has established an upset price of $29,656,510 as the lowest figure acceptable for the properties. In three previous sessions on the court house steps, when the properties were offered for sale, no acceptable bids were forthcoming.

A meeting April 25 will provide an opportunity for a petition to be made to reduce the upset price, which was established following an independent appraisal of the properties, but those on the inside do not contemplate such action. It is provided in the decress of foreclosure and sale that 10 per cent of the upset price must be deposited with the bid and a reorganization plan must be submitted fifteen days prior to the date of sale.

It has been pointed out in this connection that the properties may change hands without actual sale, provided there is no other bid and details of the plan are acceptable to the court. Actually the properties cannot change hands until four months after the deal is complete. One month is required for confirmation, and creditors not satisfied with the plan have three months in which to file an appeal.

Not "Holding Company"

WASHINGTON, April 17.— Standard Oil Co. of Indiana is only incidentally "holding company" and therefore is exempt from the Public-Utility Holding Company Act of 1935, according to a ruling by the Securities and Exchange Commission. Stanolind Oil & Gas Co., a subsidiary of the Indiana Standard, owns all of the outstanding stock of Shannon Gas & Electric Co., a Colorado corporation.

Should Respect States' Rights; Boyd Says

SHREVEPORT, April 9. — "The federal government should not, even in the name of conservation of natural resources, ride rough shod over the rights of states, of industry and of the citizens", W. R. Boyd, Jr., executive vice-president of the American Petroleum Institute, told the spring meeting of the Southwestern District of the Institute's division of production here today. Threats of federal control and of increasing taxation are serious current problems, he continued.

"If it be a true function of our government to protect and to promote the economic activities of its citizens, rather than to supplant or to destroy them, then have we not a right to expect that government itself shall not become a monopoly? Have we not a right to expect, also, that the federal government shall not, through so-called regulation processes, force an industry like ours to adopt the status of a public utility, or by any other means compel it to become monopolistic either in fact or in effect?" Mr. Boyd said.

The oil-producing states, through the interstate oil compact and other appropriate control measures, can prevent waste, promote conservation, and protect property rights, with the compact permitting all interests to work together in a common cause, he stated.

An Indignity Only Motor Travelers Suffer

LAST fall after Mr. Ellick Botts and the writer had been thoroughly searched many times by the state authorities of Arizona and California while motoring to the American Petroleum Institute meeting, we recommended that the oil companies of California could well afford to look into the discourtesies and injustices that are being perpetrated on their customers at the state border.

The cartoon below the writer found in The Age-Herald, of Birmingham, Ala., April 11. Evidently the cartoonist or some member of the paper's staff, had also been subjected to the same indignities at the California state line.

While a state has the right to forbid bringing in such material as is likely to contain germs we do not believe that a state has the right to search your car and also all your baggage, just as the customs collectors do when you enter this country.

That is what California officers do when you drive into the state but they leave you strictly alone when you come in by train or airplane. Looking for trees and bushes and fruit does not justify one in peering into pieces of personal baggage, small containers and compartments that would not be at all likely to contain parts of shrubs, or looking among the keys of a typewriter, as they did with the writer's machine.

California is undoubtedly bothered with bugs and bums but we do not believe that it is justified in setting up any such ungracious, discourteous and insulting and illegal search and seizure system as it has on its borders for those visitors who are the oil companies' customers. Arizona's procedure is not as bad as California but it is bad enough.

Aside from their pride as citizens of California in wanting to see it comply with the laws of the United States, one would suppose the oil companies of California would be sufficiently interested in the welfare of their customers to see that they are not made to suffer such unlawful indignities as they now experience in their efforts to come into the state and spend their money for its oil and gasoline.

It must be pretty bad when a newspaper as far away as Alabama gets mad enough to run the accompanying cartoon.—W. C. P.

—And Incidentally Examining His "Bill Of Rights"

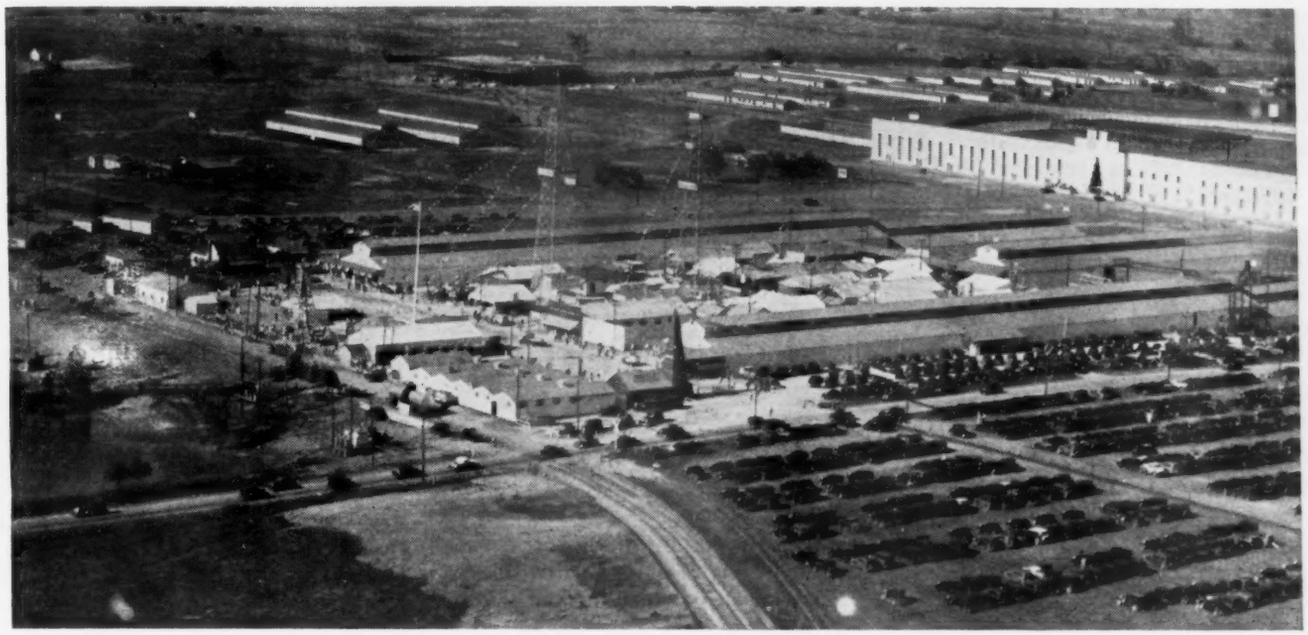
DO YOU EVER HAVE OCCASION TO TURN ANYONE BACK FOR BRINGING IN GERM LADEN OR INFECTED MONEY?
—DON'T SUPPOSE YOU HAVE ANY INFECTED WATERMELONS OR GRAPE FRUIT IN HERE, HAVE YOU?
CALIFORNIA POLICE
LIST OF INCOME TAX PAYERS
MR. TRANSIENT
FINANCIAL REPORTS
CALIFORNIA STATE LINE
Hooper

Promises Tax Cut

CHICAGO, April 18. — Promise of a reduction in the state gasoline tax rate and the exclusive use of such revenue for road purposes were prominent planks in the platform on which C. Wayland Brooks won the Republican nomination for governor of Illinois in the recent primaries.

Mr. Brooks pledged that, if elected governor, he would make a general survey of automotive tax receipts and expenditures in order to fix upon a reasonable tax rate. He also promised to spend tax revenues for the purpose for which they were levied, and to inaugurate a farm-to-market road-building program.

There is room for everybody's car at the Tulsa Exposition grounds, as this airplane view of the 1934 show reveals. This picture was taken looking northeast; the paved road along the south side of the grounds is the main highway to the city which is northwest of the grounds



Many Visitors to Oil Exposition Plan to Drive This Year

TULSA, April 18

INQUIRIES have been received by the International Petroleum Exposition from as far away as Springfield, Mass., for information on best routes to Tulsa. It is apparent that many will make the trip by automobile, probably more than in previous years.

Exposition visitors from states adjacent to Oklahoma customarily come in their cars. It is much simpler than rail travel from all except a few of the larger cities. But many others from more distant points indicate they will drive this year. There are more attractions now in the southwest than in previous years. Texas has done a big job of advertising its Centennial, the principal celebration of which opens in Dallas June 6.

Exposition-wise visitors have learned the advantage of having a car in Tulsa during the show. It is approximately three miles from the downtown section to the grounds and the man who wants to divide his time between the exposition and his hotel, or his company's office in town, finds it a great time saver to use his car. As usual, plenty of parking space will be available to the grounds. More than 10,000 cars can be accommodated at one time. Parking grounds are well policed and traffic direction is expert, so there is little delay in parking or getting away.

The oil man or supply man, however, is more interested in the things that pertain to his business than in anything else. The opportunity to get out and see what is taking place in the oil country is always grasped, whenever time permits. The number of trips possible from the Exposition to oil districts of greatest activity are numerous and can be long or short, as the visitor wishes.

From Tulsa, it is three and a half hours easy driving to the Fitts pool, one of Oklahoma's principal developments in recent years. It is only three hours of leisurely travel to Oklahoma City, where the recent extension of the Oklahoma City field has brought about an intense campaign. Approximately 100 wells will be drilling within a small area by the time the exposition opens. Wells are more than 6000 feet deep and the most modern and heaviest of equipment is used.

The East Texas field can be reached from Tulsa in seven to eight hours. About 10 hours of driving gets the driver to Rodessa, in northwest Louisiana. The Gulf Coastal region of Texas and Louisiana, most rapidly expanding area in producing, refining and shipping in the United States can be reached in one day's drive from Tulsa, but taking two days to it will allow some of the sights along the way of interest to an oil man to be seen.

Sixty miles northeast of Tulsa, in the Nowata district, use of the water flooding method of increasing recovery of oil is getting under way. This method originated in the Bradford-Allegany district of Pennsylvania and New York. In the same district are some of the largest plants devoted to repressuring oil sands with compressed air.

Wichita, center of the producing and refining industry of Kansas, is an easy five hours from Tulsa. Bartlesville, headquarters of three large com-

panies, is 55 miles away and Ponca City, a refining center, is 100 miles distant.

In its early days, Tulsa was known to travelers who journeyed overland as the place where good wagon yards and livery stables were to be found. The tradition persists. The flow of motor traffic, business and tourist, is large the year around and there are garages and parking lots a-plenty.

Fewer detours than usual exist on the principal highways leading to Tulsa, according to agencies which receive daily information on road conditions. In fact, aside from the annual paving of another short stretch on Highway 66, northeastern Oklahoma, there is no detour of consequence. Travelers are routed past that one so that they drive on an all-weather road.

Operating Problems to Feature Natural Gasoline Program

TULSA, April 18

THE tentative program for the 15th annual convention of the Natural Gasoline Association of America, released this week by Secretary William F. Lowe, indicates the technical papers will cover a wide field and probably will touch on many of the more perplexing problems of the industry.

The convention, to be held May 13, 14 and 15 at the Tulsa Hotel, Tulsa, will have on the program not only well known authorities within the industry but also several individuals well known in other professions.

The address of T. R. Goebel, Skelly Oil Co., and association president will open the convention May 13. He will be followed by H. T. Ashton, Socony-Vacuum Oil Co., Inc., Lubrite division, St. Louis. The reports of standing committees will conclude the first afternoon session.

The morning session May 14 will include a paper by R. C. Alden, Phillips Petroleum Co., Bartlesville, on "Polymerization as It May Affect the Natural Gasoline Industry," and a paper on "Operation Trends and Their Economic Effects," by S. S. Smith, Shell Petroleum Corp., St. Louis.

James E. Allison, attorney at Breckenridge Tex., will discuss "Legal Phases of the Natural Gasoline Business," and W. W. Scheumain, Empire Oil & Refining Co., Okmulgee, Okla., will present a paper on "Motor Fuel Grading by Volatility Indexes."

Three papers at the afternoon session May 14 were expected to carry forward the discussions at the 1935 convention with reference to natural gasoline and automotive engine design and performance.

Dr. G. G. Brown of the University of Michigan, Ann Arbor, will discuss "Volatility and Engine Performance," and Wheeler G. Lovell, General Motors Corp., Detroit, will discuss "Design Changes in Engines and their Relation to Modern Motor Fuels." The third speaker will be Gilbert Way, Chrysler Corp., Detroit, who will talk on "Trends in Automotive Design."

The morning session Friday, May 15, will be given over to the field men who will have a round table discussion on "Operating Kinks." Prizes will be awarded for the most valuable and practical ideas.

At the afternoon session Warren C. Platt, editor of NATIONAL PETROLEUM NEWS, will discuss "Who Pays the Taxes," and Dr. Sidney Born, University of Tulsa will present a paper, "The Spectacular Side of Hydrocarbons."

Wins Senate Nomination

CHICAGO, April 16.—Terry Carpenter, one of the well known generals in Nebraska gasoline price wars of several years ago, won the nomination for U. S. Senator on the Democratic ticket in elections this week in Nebraska.

Mr. Carpenter is still in the gasoline business in Scottsbluff, Neb., also operates a large grocery store, and is a former U. S. Representative.

Law and Taxes Feature A. P. I. Meeting

LOS ANGELES, April 16.—Taxation and a treatise on modern laws and courts featured addresses at the dinner of the annual spring meeting of the Pacific Coast district of the American Petroleum Institute's division of production, held in the Jonathan Club, Los Angeles, April 14.

Excessive taxation on the oil industry, whereby it pays more than its share toward the upkeep of government, was denounced by F. E. Foster, managing director, California Oil and Gas Association, in the opening address to the 750 California oil men assembled for the meeting.

"The industry pays about $1,250,000,000 a year in wages and salaries to more than one million men and women in its employ," the speaker said. "The industry is convinced that taxes of over a billion dollars a year are more than its fair share, and it should raise its voice in respectful protest."

United States District Judge Leon R. Yankwich, was next on the program with a subject entitled; "The Courts and the Changing Industrial Scene." He pointed out that the oil industry has been subjected to greater control than perhaps any other industry which is not a public utility and that because it deals with a product which is a natural resource still greater control may be expected.

Technical sessions of the spring meeting were held in the auditorium of the Southern California Edison Co.

Officers were elected as follows: R. A. Silent, chairman; L. L. Aubert, vice-chairman, Los Angeles Basin; W. L. Bagby, vice-president, coastal district; Lloyd Williamson, vice-chairman, San Joaquin Valley area; W. G. Corey, treasurer; and D. L. Kilgour, secretary.

Future of Federal Oil Control Rests on Guffey Decision

By **A. M. PETTY**
N. P. N. Staff Writer

WASHINGTON, April 20

THE oil industry is faced with the prospect of price-fixing and federal regulation of marketing and labor relations if the U. S. Supreme Court upholds the Guffey law which makes coal virtually a "public utility".

Constitutionality of the Guffey law is at stake in the Carter coal cases which were argued before the Supreme Court recently. A decision is expected soon after the court reconvenes after its present recess.

Federal control of coal production is *not* involved but a favorable decision on the other points would give the color of constitutionality to such an effort by federal authorities.

Reports have persisted for some months that the Administration has ready a "Guffey law for oil" in event the court upholds the coal law. Just before Congress convened there were reports that the coal people would seek an amendment of the Guffey law to bring oil under federal control so as to "equalize competition" between coal and oil as fuels. The court's invalidation of the agricultural adjustment act probably cooled such plans. But if the coal law is approved, such a move by the coal interests can be expected.

Secretary Ickes already has the coal industry under his wing (the National Bituminous Coal Commission, administering the Guffey Law, is set up in the Interior Department).

In the light of his known views that control of all natural-resource industries should be centered in the Interior Department, it can be safely said that Secretary Ickes would not be adverse to a law placing the oil industry under his control.

In the new Petroleum Conservation Division, which succeeds the Petroleum Administrative Board on the latter's "death" April 1, Ickes has the nucleus of an agency to administer an oil-control law, according to the view of some oil men.

Involved in the Carter coal cases, now before the Supreme Court for decision, are the Guffey law's provisions for price-fixing, regulation of marketing practices, minimum wages and maximum hours, and labor relations including a prohibition against interference with employes' "right" to organize and bargain collectively.

FEDERAL production control is not at issue. Before the Guffey bill was passed last August, the provisions for control of coal production were stricken out. The coal commission, however, is instructed to investigate the necessity for production control and to recommend methods of such control.

The Guffey Law imposes a 15 per cent tax on the sales price of coal at the mine but provides for a refund of 90 per cent of the tax to producers accepting a code patterned after the coal code under the National Industrial Recovery Act. Provision is made for a coal labor board, detailed regulation of employer-employe relations, fixing of minimum and maximum prices, and regulating the marketing of coal.

The Guffey law requires that the code shall provide that hours of labor, agreed upon in collective bargaining between producers representing more than two-thirds of the national tonnage and representatives of a majority of the mine workers, shall be accepted by all code members. Wages agreed upon by the same proportions of producers and mine workers in any district must be accepted by all code members in that area.

The coal commission is empowered to require reports from producers and make them maintain a uniform system of accounting of costs, wages, operations, sales, profits, losses and other matters. Failure to file a report subjects the operator to a fine of $50 a day.

The commission can go into court to secure enforcement of its orders against any code member.

In its defense of the Guffey law before the Supreme Court, the government contended that it was a valid exercise of the "commerce powers" of Congress. Government attorneys went to great lengths to show that in the coal law Congress was attempting to regulate matters "in or affecting interstate commerce".

Despite counsel's efforts to brush them aside, constitutional lawyers here believe that two major hurdles stand in the government's path to a favorable ruling. They have in mind the Supreme Court's decisions on the NIRA and the AAA.

In the Schechter case, the court ruled that the federal government had no power to regulate wages and hours of poultry dealers in New York, holding that the effect on interstate commerce was indirect.

The other obstacle is the AAA decision which invalidated the processing taxes and provisions for crop-production control. In a vigorously-worded opinion, the court held that Congress had no power to "coerce" the farmers into complying with the will of the administrator of the AAA by granting or withholding of benefits. And Congress cannot use its taxing powers to accomplish an end which is beyond its powers to do directly, the court held.

Apparently to meet this objection, the government conceded that the Guffey law tax is constitutional only if Congress has the regulatory powers exercised under the coal law.

It will be a surprise to many constitutional lawyers, in view of the NIRA and AAA decisions, if the Supreme Court upholds the federal-control provisions of the Guffey Law.

On the other hand, if there is a definite ruling, and it is ad-

verse to the New Deal (as is expected by many lawyers), it may throw into the coming presidential campaign the issue of federal regulation of trade and industry.

Following the NIRA decision last year, President Roosevelt at his famous "horse-and-buggy" press conference indicated that he might suggest a constitutional amendment giving the federal government powers to deal with "national" social and economic problems which were denied it by the Supreme Court. But since that day, talk of a constitutional amendment has been soft-pedalled. Some observers believe that the President is awaiting additional adverse decisions in hope that sentiment for a change in the constitution would be increased.

Coming on top of the NIRA and AAA decisions, invalidation of the Guffey law may be the climax that some people think the President is waiting for.

It may be followed quickly by an adverse ruling on the Securities and Exchange law. Lower courts would probably tie up the Wagner labor disputes law with injunctions, pending a ruling by the Supreme Court.

In such an event, Candidate Roosevelt may decide that the time is ripe to put forward publicly the proposal for a change in the constitution.

Whichever way the issue is decided, the future of the oil industry's relations with that of Coal.

House Votes $400,000,000 For Roads in 1938-39

WASHINGTON, April 18.—Despite opposition from the White House, the House of Representatives this week passed and sent to the Senate the Cartwright Bill (HR 11687) authorizing federal-aid appropriations totaling over $400,000,000 for road construction in 1938 and 1939. For the fiscal years 1936 and 1937, federal-aid appropriations of $125,000,000 per year have been voted.

In the interest of "economy," President Roosevelt is represented as opposing the authorizing of any federal-aid appropriations beyond 1937. There were no federal-aid appropriations in 1934 or 1935, although huge grants were made to the states for roads from emergency federal funds.

Because the federal-aid provisions were relaxed in 1934 and 1935, there was a big increase in diversion of state gasoline tax funds to other than highway purposes, Congressman Whittington, Mississippi, told the House.

"The most tragic phase of state highway financing is that approximately $150,000,000 a year is being diverted from gasoline and motor-vehicle license fees to purposes totally unrelated to highway construction or maintenance," according to Congressman Cartwright, Oklahoma, who urged that every effort should be made to discourage all diversion.

Cartwright cited figures showing that the motorist more than pays his way when it comes to road building.

On the floor of the House, Cartwright tried unsuccessfully to tack on an amendment designed to prevent the use of foreign asphalt, or asphalt made from imported crude, on federal-aid projects. The amendment was ruled out as not germane.

"Lubricate for Safety" Material Available to Oil Companies

• Because of numerous requests from readers, mats have been prepared of the safety advertisements suggested for small oil companies to use, which were reproduced as part of the "Lubricate for Safety" campaign on pages 34 and 36, April 8 issue of NATIONAL PETROLEUM NEWS. The actual size of the advertisements is 2 columns by 7½ inches.

These mats are now available to all oil companies. The complete set of four may be had for $6.00, postage paid, or mats of any one, two, or three may be purchased at $1.75 each. Engraver's proofs of this complete series may be had free of charge.

The official emblem for "National Lubricate for Safety Week" in the size shown here is available as a three-color sticker. These sell at 95 cents a 1000, including mailing charges. A large black and white proof of this emblem suitable for engraver's copy in making plates can be had for the asking.

A check with your order for either mats or stickers will facilitate handling. In ordering mats, kindly specify your preference by referring to the number above each advertisement as it appeared in the April 8 issue of NATIONAL PETROLEUM NEWS.

Address all communications to NATIONAL PETROLEUM NEWS, 1213 W. 3rd Street, Cleveland, Ohio.

Official emblem for "National Lubricate for Safety Week" May 23 to May 30

Gasoline Is Gaining as Tractor Fuel Automotive Engineers Are Told

By JOHN W. THOMPSON
N. P. N. Staff Writer

MILWAUKEE, April 16

APPROXIMATELY 300 automotive engineering "doctors" sat at a clinic here April 15 and 16 to hear some competent automotive surgeons orally dissect the subjects of tractor fuel and diesel engines.

The clinic, officially known as the Society of Automotive Engineers National Tractor Meeting, saw the tractor fuel problem laid open and its many complications explained. First, the steady increase in the gasoline octane number and the effort to lower distillate octane ratings for diesel use during the past two years have ignored tractor fuels to a point where they are now demanding some attention.

Second, tests have shown that tractors with high compression engines using gasoline for fuel give the best power output, and trend seems to indicate that more farmers are beginning to realize that fact. On the contrary, however, it was explained that there were still a number of tractor users who buy a distillate fuel because it is cheaper, regardless of its power producing ability, and that is what the oil company will sell them.

The tendency to use high flash tractor fuel is particularly evident in agricultural states where there is no refund of the gasoline tax on gasoline used on the farm. In such states the amount saved by using an untaxed tractor fuel is much more than the cost of the fuel. In Louisiana, for example, 7 cents per gallon may be saved in some parishes and in others 6 cents by burning a tractor fuel with a flash above 110 F.

To add to the general confusion on the subject of tractor fuels, a discussion between representatives of both tractor engines and fuel showed clearly the line of thought. The tractor spokesman, J. M. Davies of the Caterpillar Tractor Co., stated that the burden of engine design falls on the oil company, for as long as the oil company will sell any type of fuel to the tractor owner the tractor manufacturer must build an engine that will use any fuel.

In answering that statement, Walter G. Ainsley of Sinclair expressed the opinion that the refiner does not enter into the picture of engine design, for he is equipped to supply any fuel for which there is a demand. It was pointed out that, from an oil company distribution standpoint, the oil company cannot be expected to set up a bulk tank to serve one or two tractors with a particular fuel in a territory.

IN A paper on tractor engine fuels presented by Earl Bartholomew, of the Ethyl Gasoline Corp., results of laboratory tests, made in co-operation with A. W. Lavers, of the Minneapolis-Moline Power Implement Co., were shown on various tractor fuels. These tests showed that, with identical engines, 30 per cent more power can be developed using gasoline than with a distillate fuel, and that gasoline gives 21 per cent better thermal efficiency.

The case of gasoline versus kerosine as a tractor fuel was discussed in a paper prepared by Assistant Professor R. I. Shawl, University of Illinois department of Agricultural Engineering which showed that in an actual field test using the two fuels more gasoline was used per hour, but the advantage came in the results which showed that the gasoline driven tractor plowed more acres per hour and used less fuel per acre.

The kerosine burning tractor used in the test was a 1934 model and pulled a 4-foot disc plow. It burned 1.67 gallons of fuel per hour, plowed 1.73 acres per hour, and consumed 0.96 gallon of kerosine per acre. The gasoline burning tractor had a high compression engine head and pulled a 6-foot disc plow. It used 2.27 gallons of gasoline per hour, plowed 2.5 acres per hour, and consumed 0.89 gallon of gasoline per acre.

"Through our contact with farmers and implement dealers in the state," comments Prof. Shawl's paper, "it is estimated that during 1936 there will be several hundred additional low compression low-grade fuel engines changed over to high compression gasoline-burning engines."

It is further stated in Prof. Shawl's paper that "as long as gasoline and low grade fuels for agricultural purposes retain about the same price spread of 3 to 4 cents per gallon as we have in Illinois at the present time, that there will be a continued increase in the use of gasoline in farm tractors and that many of these tractors will be equipped with high compression engines."

Ralph C. Chesnutt, Cleveland Tractor Co., in his paper on "Diesel or Gasoline—Which Engine Will You Have?" conceded the diesel engine only one advantage over the gasoline engine—fuel consumption. He exploded the popular belief

that the diesel was simple in design by comparing the number of main parts of the diesel against a gasoline engine.

On comparing weights of these two types of engines Chesnutt said that the total diesel weight is 43 per cent greater than that of the gasoline engine and that the weight per horsepower is, diesel 21½ pounds and gasoline 15 pounds.

"We expect the diesel engine to cost more than the gasoline of equal power," he said, "and it does cost approximately 100 per cent more. The diesel accessories cost 12 times as much. In fact you can buy a good sized gasoline engine for the cost of the diesel accessories alone."

Extremely high compression ratios of the diesel mean larger bearing pressures, larger bearings, heavier piston pins, connecting rods, and crankshaft, Chesnutt pointed out.

The diesel is out of the high speed engine class entirely because of its increased reciprocating weight, a point which Chesnutt gave as a reason why the diesel in its present form is not applicable to automobile usage.

"Diesels play some mean tricks on lubricating oils," said Chesnutt. "High explosive pressures are naturally accompanied by high temperatures and the lubricating oil before very long becomes black; and instead of thinning out as in a gasoline engine through dilution, the diesel lubricating oil becomes thicker because of the accumulation of fine particles of carbon."

"This phase of diesel operation," commented Chesnutt, "recalls to my mind some oil specifications that were drawn up several years ago by diesel designer who intended to take plenty of precautions to protect his 'baby.' Investigations made by a chemist disclosed the fact that no oil refiner in the United States could produce a lubricating oil that would have a viscosity index necessary to meet his specifications."

On the matter of comparative fuel economies Chesnutt showed the advantage of the diesel over the gasoline engine. The comparison indicated that at full load the diesel delivered 14.25 horsepower-hours per gallon of fuel, while the gasoline engine delivered only 9.25 horsepower-hours per gallon. At quarter load the difference in favor of the diesel was still greater.

One of the reasons advanced for the operating fuel economy of the diesel was its ability to accelerate rapidly from low speeds and light loads to full speed and heavy loads, without excess fuel. The gasoline engine accelerates rapidly only by the use of extra fuel, or richer mixtures, provided by accelerating pumps and similar devices, it was pointed out.

Comparing the two types of engines Chesnutt said, "The lack of economy of the gasoline engine should be blamed on the cycle, and its most unfortunate fault is the bad part-throttle economy. On the other hand, the most unfortunate fault of the diesel is its extremely high explosion pressure with no appreciable gain in brake mean effective pressure."

RAYMOND W. YOUNG, of the Wright Aeronautical Corp., discussed the performance possibilities of the air-cooled radial aircraft engine and means for obtaining high fuel economy in flight operation. Mr. Young stated, "It is sincerely to be hoped that this year will see a continued activity on the part of our fuel industry which in the past has done so splendidly in the production of high grade fuels; a widespread awakening on the part of our operators to the possibilities of ultra high octane fuel so that through increased demand there may result a wider distribution together with decreased fuel costs; and finally, intensive experimentation by our engine manufacturers to produce power plants of higher performance, all for the future advancement of the American aviation industry."

In his paper on "Automotive Ordnance and Mechanization," Major John K. Christmas, Army Ordnance Department, visualized war at a new high speed, with infantry transported in fleet trucks, and big guns and previously cumbersome tanks doing 70 miles per hour. He explained that mechanization of the army transport, far behind other phases of warfare in 1916 is rapidly catching up.

The paper given at the opening session was on the subject of "Tractors and Industrial Power Equipment in Highway Maintenance and Construction," and was delivered by E. L. Roettiger, state highway engineer, Wisconsin State Highway Commission.

Court Upholds New York Payroll Tax Law

NEW YORK, April 15.—Constitutionality of the New York State Unemployment Insurance Law was upheld today by the New York Court of Appeals in a 5 to 2 decision. The action reversed that of the state's lower courts which had ruled against the act. An appeal will be taken to the United States Supreme Court, it was stated.

Under the new law, the state would set up a fund known as the Unemployment Insurance Fund, to which certain classes of employers would have to contribute 3 per cent of their payrolls. Employers hiring less than four persons, the employers of farm labor, or employment in certain charities are excluded from payments.

The plaintiffs charged the law with unequal protection and unfair classification, since employers who had no unemployment would be obliged to contribute to the fund to help those who lost positions in failing or bankrupt businesses; also because the line was drawn at four employees instead of including all and any employers.

The majority ruling, written by Chief Justice Crane, stated that the peril to the state arose from unemployment generally and that all employers were more or less linked to the problem. It stated that the law contained "nothing so arbitrary or unreasonable as to show it deprives any employer of his property without due process of law." The classifications which exempted some employers were held not to be unreasonable.

"Popping" Gas, Waking Governor, Brings Conservation Hearing

TULSA, April 18

EARLY March 30, about 5 a. m., Governor Ernest W. Marland was awakened by a noise, something between a roar and a whistle. The governor has heard many roars in the year he has held office, coming from taxpayers and legislators. This was different.

The governor was aroused, thoroughly so. He called upon the Oklahoma Corporation Commission and asked that something be done to stop gas wastage in the new Oklahoma City extension field, which now has come to within a mashie shot of the governor's mansion and is about to surround the state capitol. Gas "hopping" into the air was the source of the governor's disturbance.

The result of his complaint was a hearing April 15, conducted by the commission. This soon developed into an engineering discussion of the function of gas energy, bottom hole pressures, gas-oil ratios and the like and wound up with the appointment of a committee to study the problem and make recommendations.

The governor opened the proceedings himself. He made a personal appearance and read a statement. He said:

"I appear before you in my capacity as chief executive of the state of Oklahoma, to call your attention to the fact that a great waste of our petroleum resources is occurring in the Oklahoma City field in plain sight and hearing of the capitol. A great amount of natural gas, measurable in tens of billions of cubic feet, is being blown into the air, which, if properly conserved, would add to the future productiveness of our oil field and increase tremendously its ultimate yield of petroleum and supply fuel for the people of the state.

"All our scientific knowledge leads us to the conclusion that the gas blowing from any one of these wells exhausting into the air was migratory in character and may have come underground from any part of the field a long distance from the hole where it is exhausting—blowing off. It is not the property of the owner of the land on which that hole is drilled and the gas escaping. It is not the property of any individual land owner in the field. It is not even the common property of all the land owners of the field.

"Under our law it might, of course, become the property of whoever captured it and reduced it to possession. No one is reducing it to possession when these oil companies drill holes into the common reservoir and allow the gas to escape into the air. This is a trespass upon the rights of all the people of the state. A crime against the common interest, against the commonwealth, is being committed here in plain sight.

"As chief executive, I submit to you this question:

"Have you, the Corporation Commission of Oklahoma, legal authority to prevent this waste? If you have I know that you, after this hearing, upon which you are about to enter, will take proper measures. If after this hearing you find that you have no authority in law to prevent this waste, I respectfully request that your commission so inform the chief executive. If you cannot prevent it under your authority, I will extend the military zone—and do so.

"I have another question:

"Is there no law under which the Corporation Commission can prevent the well just north of the front door of the capitol from slanting the hole and tapping to sand under the building? The permit of the city gives them that right to drill just north of the curb on the north line of 23rd street. Less than a five degree angle will put the bottom of the hole under this office."

The governor then left the hearing. The commission did not then, and so far as is known has not yet, attempted to get a definition of its powers. Hence, the governor has had no answer to his first question and he has not yet tried to conserve gas by military fiat.

Nor was his second question —that pertaining to the possibility of a well being drilled so as to end up under the capitol—answered. Some critics thought the governor was a little hasty. The well, Hall & Briscoe's operation, was rigging up. It hadn't made any hole and whether it would be "slanted" was not known. Wells are sometimes deflected from the vertical on purpose, usually the deflection is accidental.

Should the Hall & Briscoe hole wander from the vertical of itself, it would be more likely

The governor was afraid this one would be drilled so as to end under the statehouse

to incline to the east—up dip—than to the south in the direction of the capitol. At any rate, said critics, nothing could be done on the governor's guess that the hole might get over and finish on state property. His only course would be to wait and ascertain that it had done so, then sue for compensation.

The hearing was probably more important than mere protection of the governor's slumbers. Agitation is growing over the country for better handling of natural gas. Gov. Marland's complaint is an official fanning of this flame.

The well which provoked him to action was British American Oil Co.'s No. 1 Piersol. What some engineers referred to as a gas cap existed in that area and, when opened, the well would make a large volume of gas for some time before oil flow would begin. Commission figures showed that the well's potential for April was 15,036 barrels of oil and 93 million cubic feet of gas. The gas-oil ratio was 6185 feet per barrel. Next highest ratio was the same company's No. 3 Piersol, 2930 feet per barrel. Since the April potential tests were made, Piersol-1 was drilled deeper and the gas-oil ratio was reduced to about 3000 cubic feet per barrel, less than half what it was when it awakened the governor.

In this new extension to the field there were 20 producing wells at the time the hearing was held and about 100 more were drilling or preparing to get started. Flowing life of the extension is expected to be short. Three of the 20 are already on gas lift and others have to be stimulated to flow. One has a gas-oil ratio of only 535 pounds. Bottom hole pressure is falling rapidly; it has declined about 90 pounds since the first of this year, shortly after the discovery well of the new area was drilled.

The new field is continuous as to structure with the older Oklahoma City field. It is merely new in that the city did not permit drilling across the city's east side. Otherwise, the area would have been developed long ago. The several plebiscites held have opened, little by little, the east side of the city and another election is set for May 12 which will leave only a few parcels of territory closed to development.

May Settle State Land Drilling Question

OKLAHOMA CITY, April 18.—The tiff between Governor E. W. Marland and the city council of Oklahoma City over drilling on state lands which are within city limits is in process of being settled.

The council has called another city-wide election for May 12 and this time will subject to the vote the proposition of authorizing drilling on the state lands now designated by the governor as a military zone. On these parcels of state land five derricks are up, with a national guardsman on duty at each.

The city is carrying on a court fight to compel the state to recognize its authority over state lands lying within city limits, but with virtual assurance that the people will vote to open state lands to drilling, interest has waned in the conflict of jurisdictions.

Gas Popping Stopped In Panhandle

TULSA, April 18. — The wasteful venting of residue natural gas has been stopped entirely in the Texas Panhandle area since the three-judge federal court decision late in March on the constitutionality of HB 266, the state's anti-gas wastage law.

Most of the stripping plants in the Panhandle already had been curtailed to the point where no wastage of gas was being done, even before the court handed down its decision. There were two operators, however, who had continued to operate under injunctions but who had agreed, it was understood, to shut down as soon as the court's verdict was announced, regardless of the ruling.

Inquiry in the Panhandle area today indicated that one company still was venting some gas to the air, but the plant was being operated on gas from wells in one area which had an exceptionally high gas-oil ratio. Another company was popping some gas from oil wells, but this practice is permitted under HB 266.

In the meantime considerable interest is being developed with reference to a Texas Railroad Commission hearing at Pampa, Tex., May 11, when a request of the Shamrock Oil & Gas Co. will be heard. The Shamrock company is seeking to have a new method of testing "Bradenhead" wells adopted which apparently is designed to provide a larger gas-oil ratio. Some of the Panhandle oprators, meanwhile, have not been attending the monthly hearings at Austin but are expected to take part in the hearing at Pampa.

Price Sellers Refuse To Give Testimony

MILWAUKEE, April 17.—Refusal of several price sellers to testify at the Wisconsin markets department hearings here April 16 and 17 may lead to court action to get their testimony.

The price sellers contended that their business operations were private. The markets department may take the issue into circuit court to determine whether the testimony must be given.

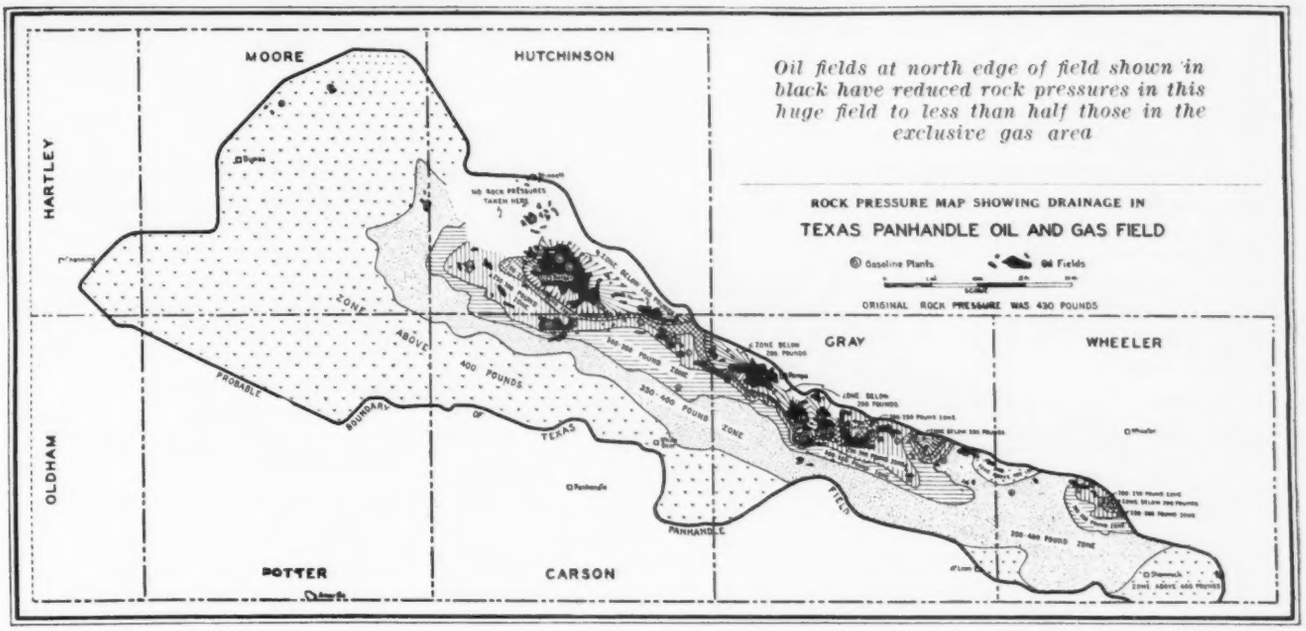
Several price sellers and retailers did testify at this week's hearings. The hearings were adjourned to April 30 in the courthouse at Milwaukee.

McDonald Director Dies

DUBUQUE, Ia.—William A. McDonald, a director of A. Y. McDonald Mfg. Co., Dubuque, Iowa, died very suddenly Sunday afternoon, April 12, after an illness of only three days. Mr. McDonald was 35 years of age and a son of the late J. M. McDonald, former president of A. Y. McDonald Mfg. Co.

To Sell Properties

TULSA, April 18.—Sale of the properties of the Atlantic, Pacific & Gulf Oil Co. at Wichita Falls, Tex., May 5 has been ordered by Federal Judge Atwell of Dallas. Receivers certificates against the properties total $225,000. The properties, including a refinery, were placed in receivership in 1931.



Oil fields at north edge of field shown in black have reduced rock pressures in this huge field to less than half those in the exclusive gas area

New Gas Conservation Policy Is in the Making

Natural Gasoline Manufacturing Already Beginning to Conform to New Operating Conditions

• • •

By LAWRENCE E. SMITH
N. P. N. Staff Writer

TULSA, April 18

THE principal gas producing states have been moving slowly toward a conservation policy and at this moment they have arrived at a position considerably short of perfection but far in advance of what they were five years ago.

The production of natural gasoline in the southwest will be considerably affected as a result of this policy, but gradually and perhaps over a period of years.

Perfection would mean the utilization of all gas produced. Waste now occurs, but in much lesser degree than formerly. Today the chief waste is of gas produced with oil, processed in natural gasoline plant and then, as to the residue, dissipated into atmosphere except for that portion which can be used in plant and field engines and burners. Not all gasoline plants so dispose of gas. Many of them dispose of residue to public utility companies who move the gas to consumers. In fact, a majority of plants make useful disposition of residue gas. Lack of market prevents others from so doing.

The problem has in the past few years narrowed to one area, the Texas Panhandle. Some gas is wasted in all states, of course, but big-volume disposition of gas into the air was most pronounced in the Panhandle. The size of the field, the character of ownership and the marketing conditions brought about a waste that was at times in excess of one billion cubic feet per day. Naturally, nation-wide attention was centered upon this area.

After several years of struggling with this problem, the Texas government has succeeded in reducing greatly the amount of gas that goes into the air. The Texas law was defined by a three-judge federal court in March, 1936, to be an anti-waste statute. At the same time the court struck down the orders of the Texas Railroad Commission which provided for proration of gas, saying that the commission was attempting to compel gas companies to share their markets with producers who had no markets.

Appeal is being taken by the commission to the U. S. Supreme Court in an attempt to establish the right to prorate gas production. It will be some months before settlement of this question can be had. The court cannot hear arguments before the fall term, if it elects to hear the case. It is probable that no decision would be made before the first of next year.

But the state has thus far established its right to prevent physical waste and as a result the "stripper plants" which formerly processed hundreds of millions of feet of gas each day

and disposed of the residue into atmosphere have shut down. That much of the waste has been stopped.

Along with this partial victory, the state also established in the same court the right to restrict use of "sweet" gas to light and fuel uses. Carbon black plants, under the law and the decision which sustained it, may use only "sour" gas, which is unfit without treating, for light and fuel.

The chief cause of controversy in this field was the fact that utility companies held acreage on which they developed production sufficient to supply their markets. They were not compelled of necessity to buy gas from other producers, hence such producers began to seek relief at the hands of the legislature. In 1931 what was known as the common purchaser act was passed. This required pipeline companies taking gas in the state to buy ratably from producers under such conditions as the railroad commission should prescribe. This law and the orders issued thereunder failed to survive a test in the courts.

Getting at the same thing in a different way, the legislature then passed a law authorizing the Commission to ascertain the market demand for any particular field and allocate the production among the producers. Again, the courts struck down the statute and the orders.

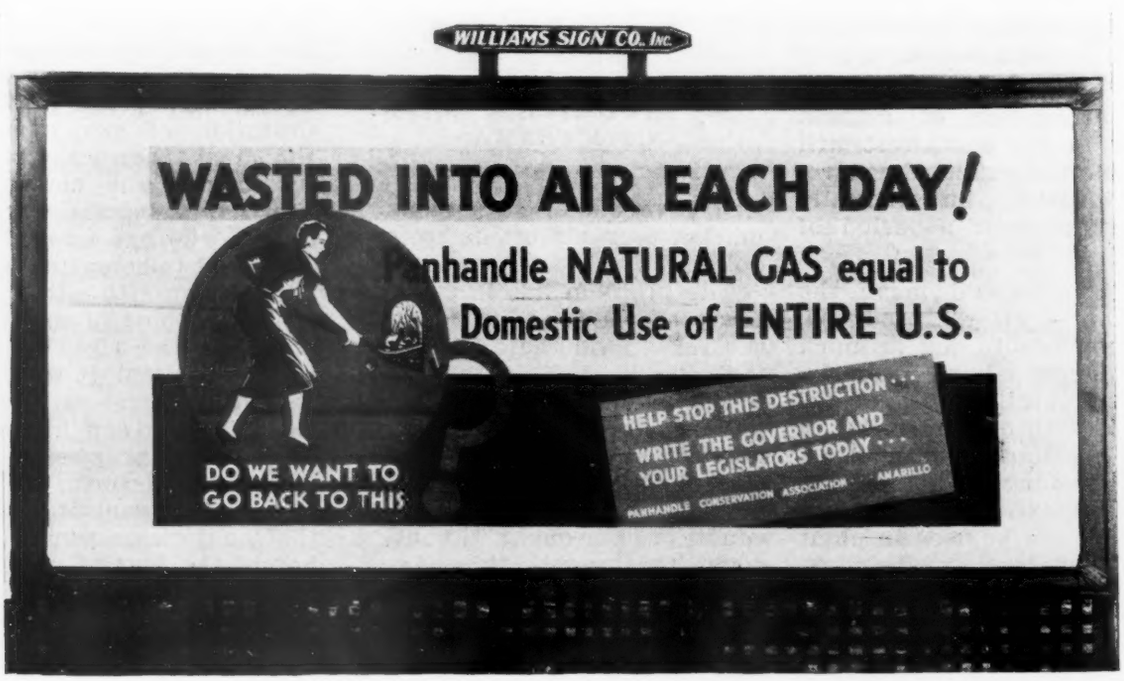
The result of the reversals was the passage of the so-called stripping law. Under this, the commission was given authority to permit the use of natural gas in stripping plants. Previously, only casinghead gas had been stripped. The term implies the extraction of gasoline content and the disposal of residue into the air.

Waste of residue gas from the plants which were built under permits issued by the commission was huge. The public clamor over the rapid depletion of this great reserve was loud and insistent. Certain public officials in Texas pushed through the legislature in 1935 the present law, which has resulted in great reduction of waste in the Panhandle and in certain other areas, less widely advertised.

The present situation is that the state, according to the court, has ample authority to prevent waste. Presumably, although this point was not passed on by the court, it may even move to restrict waste of casinghead gas, which is gas produced incidentally with the oil and a considerable amount of which is wasted, after processing in gasoline plants. The commission is undertaking to deal with this form of waste by setting the amount of gas which may be produced with each barrel of oil.

Absolute prohibition of gas waste is not simple of achievement, despite the outcries of the simon-pure conservationists, who usually lack practical knowledge of oil and gas producing methods. It is necessary to bring some gas to the surface with each barrel of oil. Frequently the amount so produced is far in excess of any local market demands, such as lease and plant use. So, after recovering the natural gasoline, there frequently is nothing that can be done with the residue except waste it. In some fields, it is returned to the producing sands, there to stimulate the flow of oil, but this is not practicable in all fields.

Just as the control of flush oil fields was several years in the making; just as it required much litigation and statute-making to shape a definite policy, so will the absolute prevention of gas wastage require a further period of trial and error. But the policy is quite definitely being made, and the gas conservation policy that is now being worked out in Texas will undoubtedly be followed in other states in time.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Public opinion against gas waste was sought by a committee through the use of billboards such as these when the legislature was considering the anti-gas waste law

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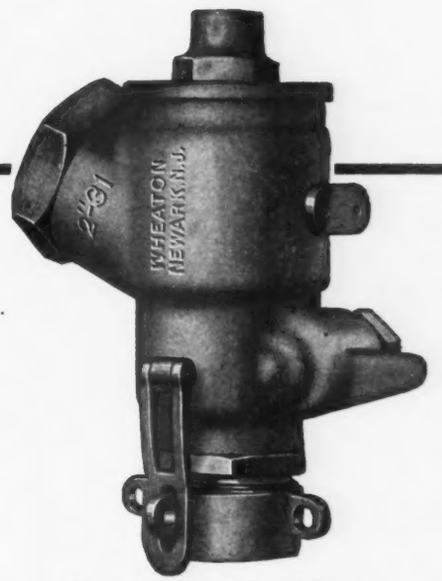

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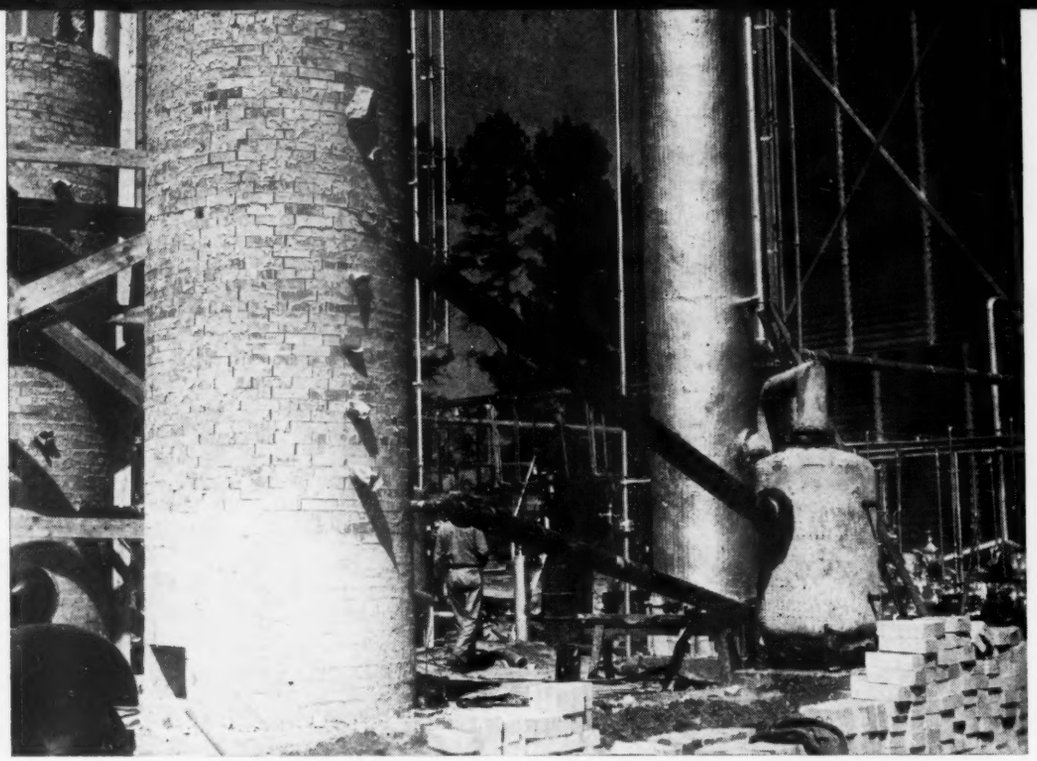

Vertical coils in cylindrical stills will be used at the East Texas Refining Co.'s new natural gasoline plant in the Rodessa, La., field. This shows one of the stills connected to the stabilizer. The other still is connected to fractionating tower

Effect on Mid-Continent Natural Gasoline Output of Texas Anti "Popping" Law

By **ARCH L. FOSTER**
N. P. N. Staff Writer

THE permanent reduction in the amount of natural gasoline produced in the Mid-Continent region, caused by the stopping of the practice of blowing stripped gas into the air in the Texas Panhandle, as provided by a new law in Texas, is likely to prove small.

Information obtained on production of natural gasoline the past year and the present trend and activity in other Mid-Continent fields than the Panhandle, indicates the loss in production there will probably soon be made up by increased production in other districts.

This is the conclusion of a survey made by NATIONAL PETROLEUM NEWS over the past several weeks.

During 1935, up to August, slightly more than a billion cubic feet of Panhandle gas was popped to the air daily, after being stripped in natural gasoline plants, according to figures collected by the Texas Railroad Commission.

Enforced strictly without fear or favor, the recent act of the legislature will shut in that entire production. The amount of gasoline which will thus be prevented from finding its way to market cannot be determined exactly. Dependable estimates show yields of gasoline from this Panhandle gas at from 0.26 to 0.45 gallons per thousand cubic feet.

It appears to be a safe estimate that, by shutting in a billion cubic feet of raw gas per day, the total reduction in natural gasoline production in the Panhandle should be at least 300,000 gallons per day. The reported Panhandle production in July, 1935, was 719,000 gallons. In August, after the amount of gas blown to the air was reduced from one billion feet to 300,000,000 feet per day, the daily reported production was reduced to 525,000 gallons, a loss of 194,000 gallons. However, the total Mid-Continent production was reduced during that month by only 124,000 gallons, the increased production elsewhere making up part of the loss. Oklahoma alone showed an increase of 43,000 gallons per day, East Texas a 33,000-gallon increase.

If the Texas commission carries out its orders and shuts in all Panhandle plants which have no commercial outlet for stripped gas, this entire billion feet will be shut in and its yield eliminated from the market. According to the March 31 decision of the three-judge federal court, the law preventing physical waste of gas in Texas is valid and may be enforced. The gas lines cannot be forced to take gas ratably, however, from all producers in the entire field and may be expected to produce from their own holdings. These companies thus will drain gas from the holdings of companies nearby, which have no pipeline outlets. This leaves the com-

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pany which has no gas line connections in the field unable to operates its own properties, while those properties, in the opinion of at least some of these companies' officials, are being drained by adjoining leaseholders.

To review some of the details regarding the Panhandle gas field. It is about 125 miles long and averages about 20 miles in width, including approximately 2500 square miles, or 1,504,000 acres. Of this total, 1,066,662 acres is sweet gas production, and about 438,000 acres is sour gas. Natural gas containing less than 1.5 grains of sulfur per cubic foot is rated arbitrarily as sweet gas; gas containing 1.5 or more grains of sulfur is sour gas. Only sour gas may be used in making carbon black.

Twenty-nine carbon black plants have been in operation in this area, which produces 70 to 85 per cent of the carbon black made in the United States. The capacities of these combined plants is reported to be 570,000,000 cubic feet of sour gas per day, yielding from 1.25 to 2.0 pounds of black per thousand cubic feet of gas; the average is reported to be 1.43 pounds.

There are slightly less than 1100 gas wells in this area, of which 225 are sour gas wells, in addition to 2527 oil wells. An oil well is defined by the state law as one for which the oil-gas ratio is one barrel of oil or more to 100,000 cubic feet of gas. From an original rock pressure of 430 pounds per square inch, the pressure in the field has been reduced now to about 200 pounds per square inch. It has been estimated that the reserves of gas in this field alone amount to from 14 to 25 trillion cubic feet. The present rate of withdrawal is about two trillion feet in three years, of which about one trillion feet has been going to the air.

The average production, or "take", of gas during the first seven months of 1935, before the new Texas law preventing blowing gas into the air became effective was about 1,825,000,000 feet per day, of which more than half (1,050,000,000 cubic feet), was blown to the air after stripping. The average yield of natural gasoline in 1932 was 0.74 gallons per thousand cubic feet; in 1935, this yield had dropped to not more than 0.45 gallons, showing that more dry gas was being processed than at first.

The nine major pipeline companies hold 850,000 acres of gas lands, or about 80 per cent of the sweet gas area. These companies are Northern Texas Utilities Co., Lone Star Gas Co., South Plains Pipeline Co., Canadian River Gas Co., Texas Panhandle Gas Co., Panhandle Eastern Pipeline Co., Texhoma Natural Gas Co., Northern Natural Gas Co., Cities Service Gas Pipeline Co.

THEIR combined gas capacity is given as 917,000,000 cubic feet per day, and they supply a large number of the larger cities of the midwest and the eastern mountain area, such as Denver, Omaha, Kansas City, St. Louis and Chicago. Their lines total 4500 miles of pipe. There are ten smaller lines in the Panhandle, with a capacity of 62 million cubic feet per day.

The prospects for greatly increasing the consumption of stripped gas in the Panhandle, either sour or sweet, are not good. Generally speaking, the increase in sweet gas consumption which may be expected is only that which will come as a normal increase in demand for industrial and domestic fuel and in sour gas consumption the normal increase in carbon black consumption in the tire, ink and other industries.

The U. S. production of carbon black in 1935 was 390 million pounds, according to Drogin (Chem. and Met., Mar. 1936, page 139). Drogin states that 85 per cent of this amount, or 331.5 million pounds, was produced in the Texas Panhandle. Predicting the probable increase in use of carbon black in 1936 is dangerous, but it can be expected to be not greater than about 15 per cent. Such an increase, prorated to the Panhandle, would give an additional production of about 50 million pounds, an amount which is considered quite optimistic. At the average yield of 1.43 pounds per thousand cubic feet, this amount will utilize about 35 billion cubic feet during the year, or about 100 million cubic feet per day of additional sour gas.

No reasonable estimate can be made now, so far as we know, of the number or capacity of new carbon black plants which may be built this year. Probably in many cases decision to build or not to build carbon black plants will hinge on several factors, including possible increased carbon black demand, an indeterminate figure; opportunity given under the law for companies controlling both sweet and sour gas production to maintain or increase their natural gasoline production from sweet gas and thus to supply their own or their market's needs without processing additional sour gas.

So far, only three or four new plants have been built or are building in the Panhandle. It is understood, though not confirmed, that United has built or is to build one for Phillips or in connection with Phillips gas. Shamrock is understood to be planning or building two plants. The Magnolia plant near Skellytown, leased to Huber, may be moved to Moore county, which will not increase carbon black production, unless the capacity is increased. United is reported to be transferring one or two plants from Louisiana.

The Cabot carbon black interests are reported to have contracted to drill eleven sour gas wells on several thousand acres in the Panhandle, the gas to be used presumably for carbon black after stripping the natural from it. Two Western Natural carbon black plants and a Magnolia unit said to be operating on sweet gas, will probably be forced to move into sour gas areas, which will give more outlet for sour gas but will not increase natural gasoline production appreciably. Columbian is reported to be moving plants from Le Fors and Pampa into Moore county, the sour gas area.

Altogether, from the tangled skein of the whole complicated picture, it appears now that probably not more than one-fourth to one-third of the natural gasoline production in the Panhandle, which will be shut in by stopping the popping of gas to the air, will be made up by additional or changed out-

What, no gasoline?

Did you ever hear of a cracking unit that cant make gasoline?

One refiner has such a unit He cant even CALL its product gasoline

Why?

Because the unit can crack only one kind of oil—and it's the wrong kind

A sad story

This refiner is putting in a Dubbs unit

From now on it will be a different story

The Dubbs unit will crack all kinds of oil and make the best kind of gasoline

—Dubbscracked gasoline

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
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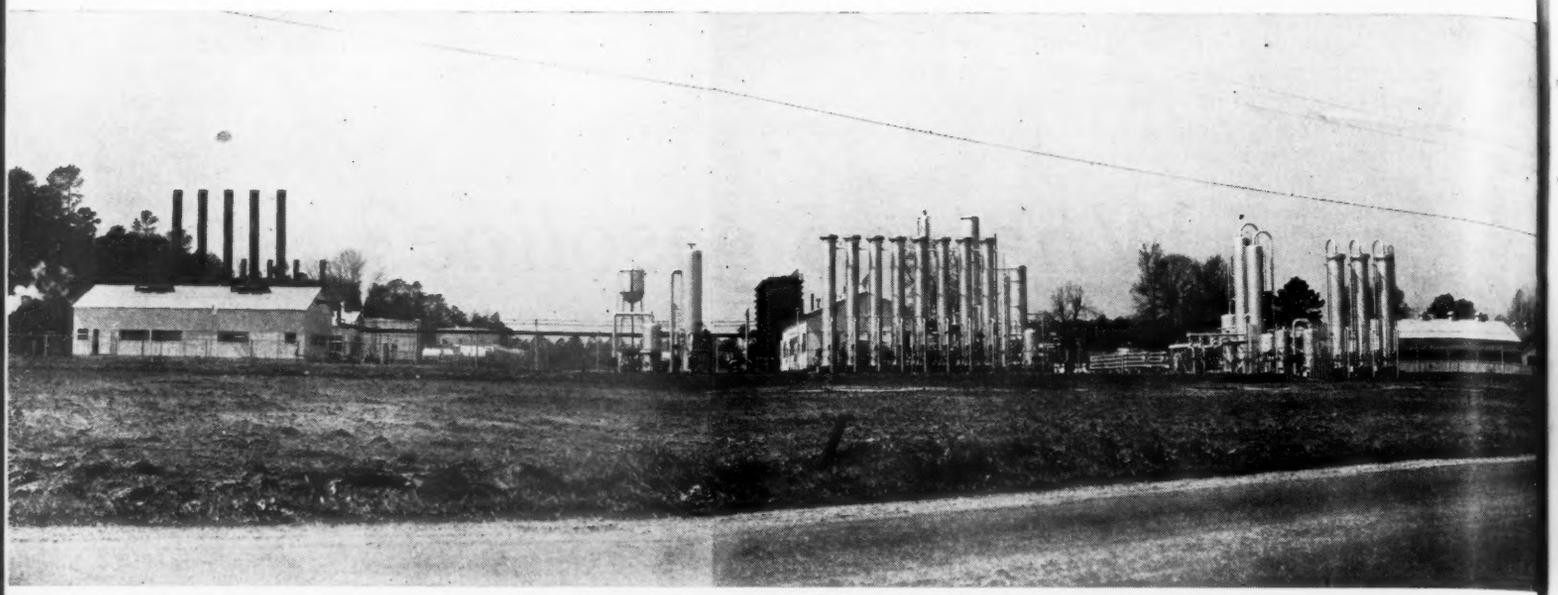


This large plant has been operating in the Rodessa field for several years, handling the gas which went into the United Gas Public Service Co.'s natural gas lines from Rodessa's gas wells. Now that new production has been discovered this plant will be enlarged by the addition of a third unit. It had been manufacturing approximately 50,000 gallons of natural gasoline a day

lets for gas either sour or sweet.

The natural gasoline companies hardest hit by the stoppage of gas popping are the Cargray interests, reduced from a throughput of 200 to 250 million cubic feet per day to 30 to 40 million cubic feet; Henderson, reduced from about 150 million cubic feet to 40 to 50 million cubic feet, of which 30 millions is said to be going to carbon black plants; and Shamrock, its throughput reduced from 100 million cubic feet to half that figure.

The plight of these companies, as well as of others which have been considerably reduced in throughput, will depend on the further action of the legislature regarding the ratable taking of gas; voluntary contracts which the gas pipeline companies may be induced to make on a ratable taking basis; and the strictness with which the railroad commission enforces the no-popping provision.

The same situation as to popping gas to the atmosphere applies to south and southwest Texas plants. Already the Clymore plant, producing about 30,000 gallons of natural gasoline from 75 to 100 million cubic feet of Agua Dulce field gas, is closed by a commission order. On the strength of the same order, the W. L. Pearson Properties, Inc., in the Refugio field, nearby the Agua Dulce, is prohibited from popping 35,000,000 cubic feet per day to the air, shutting in 10,000 to 15,000 gallons of natural gasoline production per day. If, following the three-judge decision of March 31, companies without gas outlets are still prevented from popping gas, this production of about 50,000 gallons can hardly be resumed, except by the individual companies obtaining industrial or domestic fuel outlets for the stripped gas.

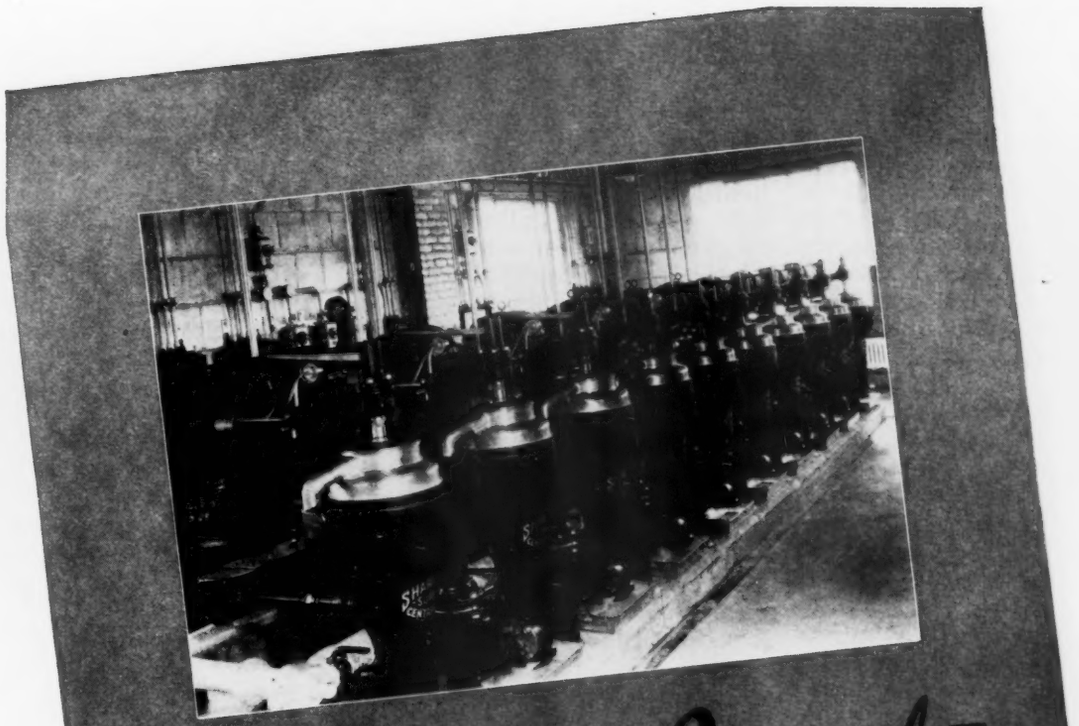
At the Conroe field, only the Humble and Midland Gasoline Co. are operating plants. While additional gas is available for processing, the prospects for its immediate utilization are remote, unless the market price of natural rises appreciably, or the supply is seriously limited. Since we are going into the lean season for natural, neither of these contingencies appears likely.

In Oklahoma, some increase in natural gasoline production may be practicable. Oklahoma City will not likely increase its production greatly, except as new drilling may bring in additional casinghead gas for processing. No dependable estimate can be made now as to how much that increase might be, but the extension of the field into the town-lot areas should increase the possible production by several thousand gallons per day.

It has been estimated that 20,000 to 25,000 gallons of natural gasoline per day can and will be produced in the Edmond pool, provided the price rises to a somewhat higher level. Some gas also will be popped to the air in the Fitts pool, possibly as much as or more than the amount available in Edmond, making possibly 50,000 gallons per day of make-up natural, if the demand makes its production profitable.

Some additional production in New Mexico may be expected. It is reported that both Phillips and Warren Petroleum are building, or transferring, plants to New Mexico, and that the production from there will be thus increased by as much as 50,000 gallons per day. So far as is known, Sinclair, Shell, and Skelly are not planning definitely to increase their production there.

The most promising areas, then, for increasing natural production, or for making up any shortage due to shutting in the Panhandle gas are East Texas and the Rodessa, La., fields. Rodessa drilling continues, with more than 120 wells now completed. The best Rodessa gas yields from 0.73 gallon to 1.625 gallons with



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some of it at 0.3 to 0.5 gals. This gas is relatively low in octane number and the leanness of the butane content often makes it difficult to produce the higher vapor pressure grades, it is said.

Two plants, those of Arkansas Natural and of United Gas Public Service Co., have been operating in Rodessa for some time. United's 50,000-gallon plant, in two units, will have its capacity increased 50 per cent by the addition of another unit, it is understood. The Burford interests (East Texas Refining Co.), are building a 30,000-gallon "distillate and natural gasoline" plant at Rodessa. The Pelican Gasoline Co. is also building a plant, said to have capacity of about 10,000,000 cubic feet of gas per day, which is to start operations sometime in April.

The Haynes Production Co., of Shreveport, is reported considering the erection of a gasoline plant, but no decision has been announced. Continental Oil Co. is building a plant of 50,000,000 cubic feet (50,000 gals. per day) capacity at Basile, which should be in operation by early summer. What further building may be done in this field is problematical but it is to be expected that, as the field is expanded, and additional wells are brought in, other plants are likely to be built to take care of the gas. Carbon black may be made in that field, but it is not expected that such will be the case, since Louisiana officially is discouraging carbon black manufacture, and no new plants have been built in that state for some time. If gas conservation is enforced by the state, then the natural gasoline production from Rodessa will not increase enough for it alone to threaten the market's stability. Production men appear to believe that the field will not be extended greatly beyond its present limits.

In East Texas, the largest increase may be expected over a considerable period, as more wells are connected to natural gasoline plants; and this increase may be either potential or actual, depending on the market demand and price. Summer temperatures will increase the yield per unit of gas, as is true throughout the country on casinghead gas. More than 15,000 of the expected total of 21,000 wells in the East Texas field are already connected and supplying gas to natural gasoline plants, which now number 18, and additional connections are being made continuously. The increase in daily average natural gasoline production in this field was 50,000 gallons per day in February as compared to January, this coincident with the 145,000 gallons daily reduction in the Panhandle for the same months.

ESTIMATES made recently by informed officials state that probably as many as 19,000 wells in East Texas will be connected eventually to natural gasoline plants. Basing a theoretical calculation on the yield from the 15,000 wells now connected, the total production from East Texas from 19,000 wells, as of the February production of 309,000 gallons daily, will be increased to approximately 390,000 gallons, an increase of 80,000 gallons, or more than 25 per cent. This possible increase can be expected to materialize, even given favorable market conditions, only over a period of several months, as well connections are being made more and more slowly. The immediate effect will be small for this summer, apparently, and may eventually be lost sight of in the readjustment of seasonal production, to supply, and demand.

It must be admitted that the whole picture of Mid-Continent natural gasoline production is so variable-ridden, the prospects of the different fields are so complicated by legal conditions, by conservation problems and the likelihood of their enforcement or non-enforcement, and by the host of other factors, many of which have been pointed out here, that at best only a qualitative estimate of what will happen in the production of natural gasoline in the Mid-Continent can be made.

If, after the three-judge decision on the ratable-taking feature of the Texas law, the Texas Railroad Commission decides that decision is not fair to those producers who have no outlets for stripped gas, then these producers may be permitted to pop the gas to the air. In this case natural gasoline production may increase in the Panhandle, until such time as the Texas legislature amends the law. Eventually the blowing of natural gas into the air will be prohibited as a conservation measure not only in Texas but in other states as well.

If the Texas commission decides that gas must not be wasted by blowing into the air, no matter what the consequence to individual companies, then many believe that a serious injustice will be done those producers who have no stripped gas outlet. Obviously, according to statements of engineers, the producing lands shut in by such an order will be drained by the gas pipeline companies, without the lease-holders of those lands receiving a farthing for the gas being taken from their lands. Therefore the situation demands some sort of further action on the part of the legislature.

Some natural gasoline producers acquainted with the situation state that, since much of the Panhandle production of natural gasoline has been handled through the Phillips pipeline, that the shortage of natural there will not affect the market as much as the loss of such a volume would lead us to believe. They state that the direct effect will be that Phillips and those companies which it supplies direct will be forced to get along with less natural.

We are not sure this conclusion is correct. In the final analysis it will be determined by the willingness of this company, or these companies, to get along without the natural which presumably they have been absorbing previous to the shutdown. The situation will probably be less critical this summer, when the use of natural is lessened seasonally, than next winter, when more will be demanded. By that time however, the balance of production may be restored as a result of the action of any number of the factors will affect the situation, and the influence of many of which cannot now be estimated quantitatively.

Shift in Mid-Continent Natural Gasoline Production Follows Curtailment in the Panhandle

By ALLEN M. JAMES
N. P. N. Staff Writer

A PRELIMINARY computation indicates that the daily average natural gasoline production in the Mid-Continent in March is likely to be less than 2,500,000 gallons, and that the total natural gas consumption from wells connected to natural gasoline plants in the Texas Panhandle will be under one billion cubic feet daily.

If this indicated level was reached, it will be the first time since August, 1935, that either natural gasoline production in the southwest, or natural gas "take" by plants in the Panhandle, has been below those figures. This will be a reduction in daily average production of gasoline of at least 300,000 gallons under the peak reached last November. It will be a drop of at least 850,000,000 cubic feet daily in natural gas consumption from the peak reached in April, 1935.

This drop in natural gas "take" and the corresponding decline in natural gasoline production will be due almost entirely to the fact there have been virtually no stripping plant operations in the Panhandle during March. Owners of some of the stripping plants late in January curtailed their operations to the point they were not venting residue gas to the air. Others ceased the practice by Feb. 15. with the result that in only two instances, was there any popping of gas after that date. In those two instances it was reported the operators had agreed to shut down voluntarily as soon as a three-judge federal court ruled on the legality of certain phases of the state's anti-gas wastage law, the shut downs to be made regardless of the court's decision.

With natural gasoline production curtailed so noticeably in the Panhandle it might be interesting to study what has been going on in other natural gas producing and natural gasoline manufacturing districts, with particular emphasis on the trends since it became apparent, early in 1935, that the Texas legislature was almost certain to enact some sort of regulatory measure designed to stop the enormous wastage of gas in the Panhandle district.

Table No. 1 shows the daily average natural gasoline production in the various Mid-Continent districts for the past 12 months. Chart No. 1 shows the same data graphically.

It will be noted that in March, 1935, the daily average natural gasoline production in the Panhandle was almost 825,000 gallons, whereas the production for all of Texas was 1,327,000 gallons daily, approximately 500,000 gallons above the Panhandle figure. Then in August, 1935, when the new Texas law became temporarily effective as far as popping of residue sweet gas was concerned, natural gasoline production in the Panhandle declined 299,000 gallons daily average under the March daily production figure, but the decline in the total Texas production was only 141,000 gallons under that for March.

The chart shows graphically what was taking place. Production trends were definitely upward in East Texas, with a less pronounced upward trend for the remainder of Texas, exclusive of the Panhandle.

It will be noted also that the daily average production for February of this year was 210,000 gallons under the total for March, 1935, in the Panhandle, but the difference in the total Texas figure was only 9000 gallons. East Texas production alone had increased 170,000 gallons daily, with the remainder of Texas moving along on a fairly even keel until January when some of the southwest Texas natural gasoline plants were restricted as to production because of gas wastage.

It also is interesting to observe what was going on in other Mid-Continent districts. In Oklahoma, for example, the production trend was definitely upward until October and November, after which slight declines began to be recorded. These declines, however, may have been entirely seasonal.

The remainder of the Mid-Continent was moving steadily upward as far as daily average production was concerned and in this group are included the new Rodessa, La., and the new Monument, N. M., fields, as well as Kansas.

Then it will be noted that, whereas Panhandle's production in August, 1935, was 299,000 gallons daily below the March, 1935, figure, there was

Table No. 1—Daily Average Natural Gasoline Production in Mid-Continent

(Figures in Thousands of Gallons)

District	1935 March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1936 Jan.	Feb.
Panhandle	824	801	747	699	719	525	644	740	799	756	759	614
East Texas	138	152	173	216	225	258	246	220	169	222	259	309
Rest of Texas	365	384	390	434	413	403	409	424	418	440	398	397
Total Texas	1,327	1,337	1,310	1,349	1,357	1,186	1,299	1,384	1,386	1,418	1,416	1,318
Total Oklahoma	915	964	918	962	956	999	1,010	1,095	1,096	1,003	1,019	961
Miscellaneous	226	265	265	267	269	273	290	302	325	335	337	342
Total Mid-Continent	2,468	2,566	2,493	2,578	2,582	2,458	2,599	2,781	2,907	2,756	2,772	2,621

a difference of only 10,000 gallons daily between the March and August figures for the total Mid-Continent.

The production in the Panhandle in February this year was 210,000 gallons below the March, 1935, figure but the total Mid-Continent production for February, 1936, actually was 150,000 gallons higher than the March, 1935, total.

The statistical picture with reference to natural gas consumption from wells connected to natural gasoline plants in the Panhandle can be obtained from Table 2, a recapitulation of records kept by the Texas Railroad Commission at its Pampa office. The accompanying Chart No. 2 was prepared from the table. The difference between the sum of the volume of gas consumed in various ways and the total "take" is listed in the commission records as "extraction loss."

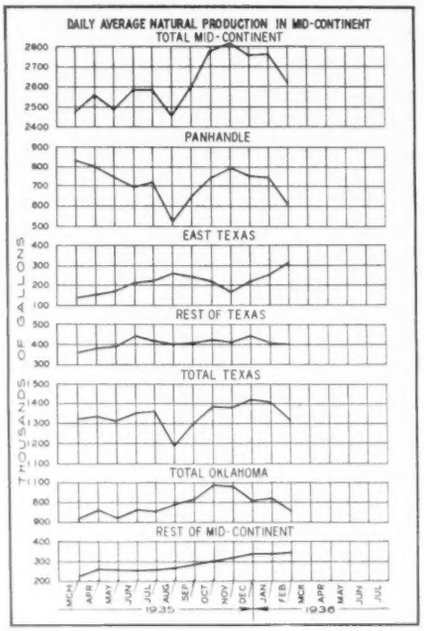
The highest daily average gas take, according to the figures, was 1,850,000,000 cubic feet during April, 1935. In May the legislature passed HB 266, the anti-gas wastage law, and the sweet gas section was to become effective on Aug. 1, and the sour gas regulations were to go into effect on Oct. 1.

While the total daily take was hovering around 1,800,000,000 cubic feet a day, the gas being vented to the air via stripping plants was consistently above one billion cubic feet daily.

When the new law became temporarily effective in August, 1935, the total gas take dropped to just under one billion cubic feet daily, while approximately 300,000,000 cubic feet of gas continued to be popped to the air. Court injunctions permitted a gradual reopening of

Chart No. 1.—Showing daily average natural gasoline production in the Mid-Continent for the past 12 months

(Figures in Thousands of Gallons)



the stripping plants and the volume of gas take stepped up but the consumption volume never again reached the April, 1935, totals before the shutdowns last February.

In the meantime the 29 carbon black plants in the Panhandle area were taking a steadily increasing amount of gas each month. While their requirements were approximately 450,000,000 cubic feet daily in January, 1935, this volume had been stepped up almost 150,000,000 cubic feet daily by last December, and the total amount of gas consumed by the plants in 1935, as shown in Table 3, reached the staggering figure of 182 billion cubic feet, an average of 500,200,000 cubic feet a day.

Although the March figures on carbon black operations will not be available until late in April, Col. E. O. Thompson, chairman of the Texas Railroad Commission, recently stated at

Table No. 2—Consumption of Natural Gas from Wells Connected to Gasoline Plants in the Texas Panhandle, Showing Total Gas Take and Disposition

(Daily Average in M. Cu. Ft.)

1935	Take	Plant and Lease Use	Carbon Black Sales	Industrial and Domestic	To Air
January	1,798,282	162,156	450,651	68,051	1,032,532
February	1,777,860	154,928	459,990	51,120	1,026,091
March	1,813,420	151,725	474,692	43,896	1,047,784
April	1,864,938	165,685	490,347	39,764	1,073,323
May	1,843,815	150,549	504,817	37,272	1,060,830
June	1,820,527	161,165	494,023	37,045	1,031,982
July	1,847,339	158,714	515,599	37,749	1,040,690
August	995,696	118,485	484,983	35,208	209,623
September	1,321,474	115,819	514,511	45,796	573,596
October	1,461,824	145,181	524,505	46,294	657,207
November	1,542,878	151,780	555,067	50,616	693,817
December	1,536,386	146,657	593,686	59,384	646,324
1936					
January	1,518,825	174,209	591,965	61,782	602,726
February	1,194,879	153,330	542,867	84,219	344,465

a commission hearing on gas allowables that approximately 875,000 pounds of carbon black were being produced daily in Texas at the present time.

The upward trend in gas consumption as shown on Chart 2 for the carbon black plants has been attributed in a large measure to the increased demand from the tire and printing industries, and in a lesser degree to increased demands from the smaller consuming industries. The fact that there was a slight drop in the February gas consumption by these plants probably can be accounted for by the fact that three of the 29 plants shown in Table 3 had been operating on sweet gas desidue and had been shut down with prospects that they will be removed shortly to the sour gas area of the Panhandle.

It is interesting to note also in connection with Chart 2 the extent to which the unprecedented cold weather experienced in the United States last February was reflected in the industrial and domestic gas consumption curve. The daily average consumption for that month was almost 25,000,000 cubic feet daily above that for January. The gas pipeline companies in that field reported the heaviest demand in their history. It must be kept in mind in studying that curve on Chart 2, however, that the volume of gas represented there is not the total gas "take" by all gas pipelines but only that portion which was turned to some of the lines via the natural gasoline plants.

As long as stripping plant operations remain curtailed it is highly probable that the daily average consumption from that field will be fairly close to the allowable figure set by the Texas Railroad Commission after its market demand hearings each month. The commission's gas allowable order for April, for example, gives the Panhandle a daily production of 708,353,000 cubic feet of sweet gas, and 403,310,000 cubic feet of sour gas, a total for the field of 1,111,663,000 cubic feet. The commission's allowable for all fields for April is shown in Table No. 4.

There are nine major and 10 small natural gas pipeline com-

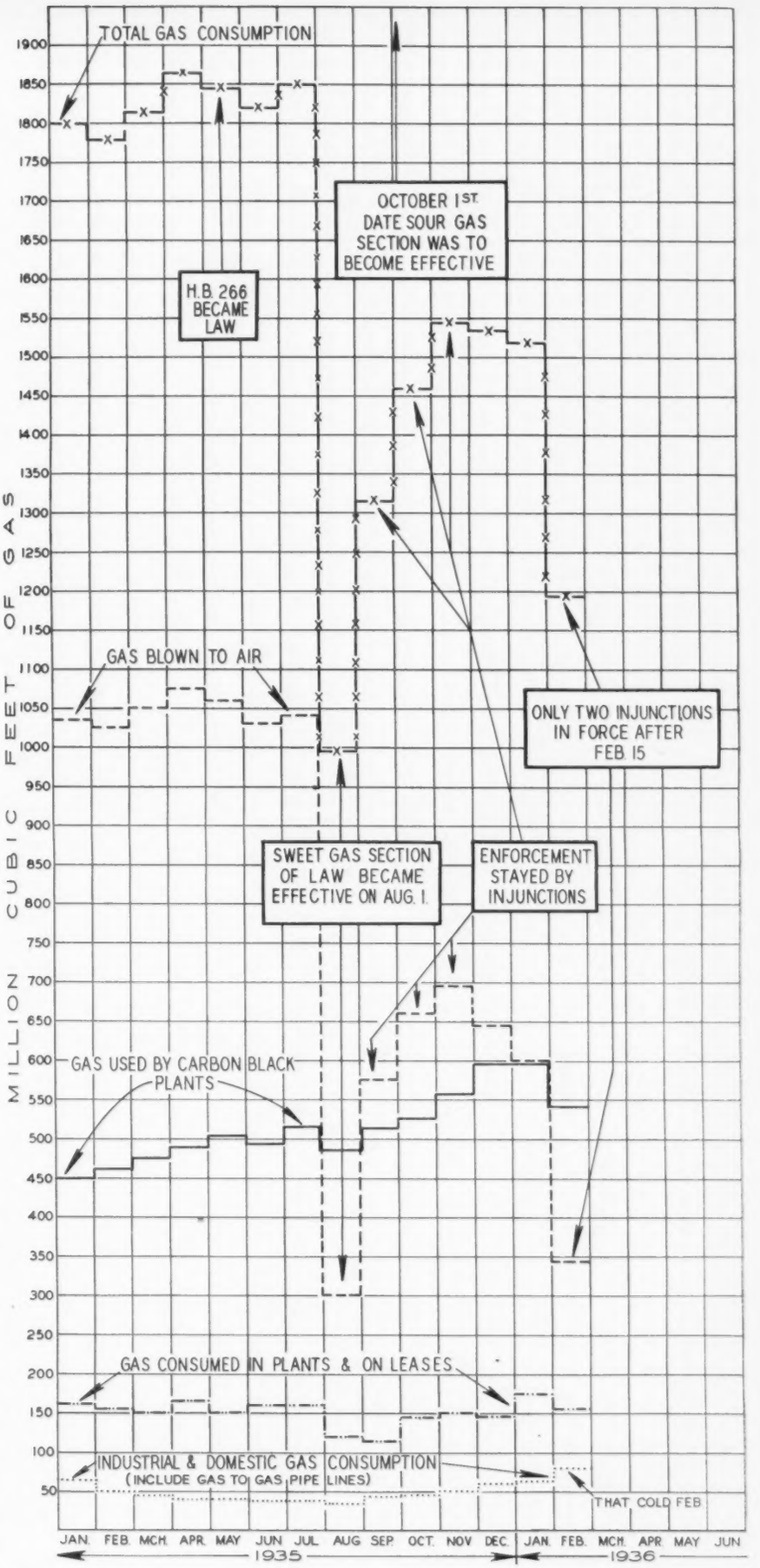


Chart No. 2—Total gas consumption in natural gasoline plants in the Texas Panhandle is shown for 1935 and for two months of 1936, to show the effect of the law in Texas against gas wastage. (HB 266) The disposition of the residue gas from natural gasoline plants is also charted, as gas blown to the air, gas used by carbon black plants, gas consumed on plants and leases and industrial and domestic gas consumption

Table No. 3—Total Gas Consumption By Panhandle Carbon Black Plants In 1935

(Figures in M cu. ft.)

Company	Plant	County	Total
BeHer Blacks	Lefors	Gray	86,680
Cabot	Armstrong	Moore	1,047,978
Cabot (Texas Elf)	Bowers	Gray	17,748,367
Cabot	Kingsmill	Gray	10,118,165
Cabot	Schafer	Carson	17,788,966
Coltexo	Lefors	Gray	10,975,281
Combined Carbon	Sanford	Hutchinson	5,461,154
Crescent	Borger	Hutchinson	4,290,222
General Atlas	———	Gray	565,633
Huber	Borger	Hutchinson	10,801,782
Huber	Skellytown	Carson	2,372,999
Magnolia	Magic City	Wheeler	1,309,787
Magnolia	Pampa	Gray	1,387,541
Panhandle	Panhandle	Hutchinson	4,634,055
Peerless	Coltexo	Gray	435,365
United (Kosmos)	Alexander	Hutchinson	9,998,533
United (Eastern)	McIlroy "E"	Hutchinson	9,659,477
United (Kosmos)	Norrick	Hutchinson	3,738,929
United (Eastern)	Rock Creek	Hutchinson	16,867,927
United (Eastern)	Sanford "A"	Hutchinson	4,923,568
United (Eastern)	Sanford "B"	Hutchinson	.....
United (Eastern)	Stinnett "C"	Hutchinson	3,397,999
Western (Plamer)	Borger	Hutchinson	7,666,483
Western (Wescar)	Borger	Hutchinson	16,519,623
Western	Kingsmill	Gray	7,615,388
Western	Lefors	Gray	4,227,149
Western	Lela	Wheeler	4,643,846
Western	Magic City	Wheeler	2,111,332
Western	Pampa	Gray	1,256,078
			182,573,434

Daily Average 500,200,000 cubic feet.

panies in the Panhandle. A considerable portion of the sweet gas allowable will go to them. The nine major lines have an aggregate daily capacity for approximately one billion cubic feet, while the 10 small lines have a total capacity of approximately 65,000,000 cubic feet. The nine major lines in 1934 took a daily average of 400,000,000 cubic feet, while in December 1935 the commission reports they took approximately 450,000,000 cubic feet daily.

With stripping plant operations suspended about the only way the Panhandle natural gasoline production decline can be built back up will be through larger volumes of residue gas going to the pipelines, closer processing of casinghead gas and greater consumption of gas by carbon black plants. Natural gasoline manufacturers who have studied the situation apparently are of the opinion there will not be enough increase in gas take from those sources within the next several months to make any appreciable difference in natural gasoline production in the Panhandle.

The East Texas field accordingly has been attracting more attention because of its potential possibilities. There now are at least 18 plants in the East Texas area, as shown in Table 5. These plants were connected, in January, to 15,017 of the approximately 20,000 wells in the field, and they processed an average of 104,329,000 cubic feet of gas a day.

Now if all the 20,000 wells in the field were connected to natural gasoline plants, and the gas take was in proportion to that for the 15,000 wells and the yield remained unchanged, the daily natural gasoline production for the field would increase almost 70,000 gallons daily. It must be kept in mind, however, that a large number of these wells will never be connected to plants, due in some instances to their isolation, which would make the cost of pipelines prohibitive, and also to the fact that some of the wells would not "pay out" in gas volume. On the other hand it has been pointed out that, with the gas pressure in the field relatively low, the wells will have to be pumped long before the fields is exhausted, and that, with the advent of pumping, the gas will become richer and the natural gasoline production accordingly will be increased considerably. That production increase, however, apparently will be gradual.

How many more plants will be built in the East Texas field is problematical. At the present time it is reported that every one of the larger available locations has been used and any new plants will of necessity be small ones and connected to a relatively few wells.

Over in the Rodessa field, in northwestern Louisiana, natural gasoline plant construction has been relatively slow, probably due in a large measure to the poor grade of natural gasoline obtained. Two gas companies which already had large plants in the field, primarily to strip the gas which went into their pipelines, are planning to add one or more units.

The Pelican Refining Co. and the East Texas Refining Co. each are completing natural gasoline plants in the field, the capacities being approximately 10,000,000 cubic feet of gas each per day.

Carbon black plants still are operated in the Monroe, La., field but the heavy tax placed on their operation has been in-

TABLE No. 4—Daily Gas Allowable Production for Texas for April, as Fixed by Texas Railroad Commission

	Cubic Feet
Total All Texas	1,421,956,000
Sweet Gas	
Panhandle—	
East zone	133,874,000
West zone	575,479,000
	708,353,000
Southwest Texas—	
District No. 1	1,853,000
District No. 2	82,144,000
Gulf Coast	55,222,000
District No. 4	67,140,000
East Central Texas	1,000,000
East Texas	35,200,000
West & North Texas	53,143,000
	296,002,000
Sour Gas	
Panhandle	403,310,000
Southwest Texas	4,070,000
West Texas	10,521,000
	417,901,000

strumental in preventing any new plants being built the past few years. There has been some speculation as to the possibility of carbon black plants being constructed in Rodessa, and the official of one large company declared he expected to see some plants built despite the present tax. The plants would have "political sanction" he indicated and, if necessary, the law would be tested in court.

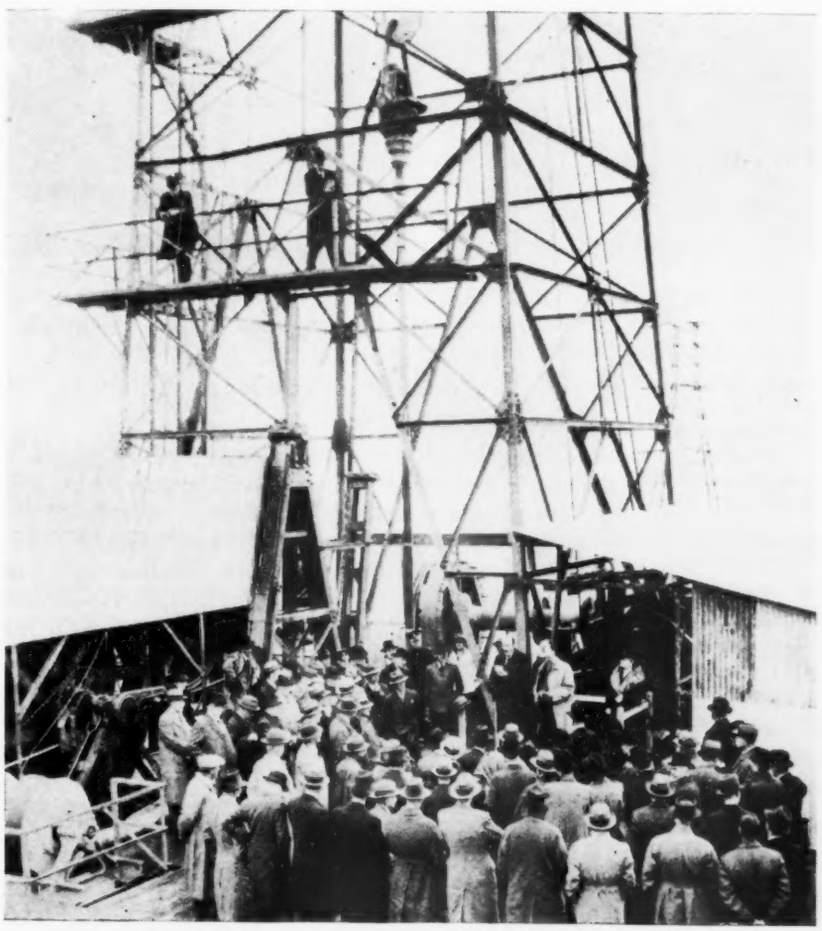
Then there is the New Mexico fields with their steadily increasing production. Natural gasoline production in that state has been hovering around 50,000 gallons daily now for about a year, but at least two comparatively new plants are in the field and their output is limited at present only by the number of well connections. What the production of natural gasoline will be as well completions increase is entirely problematical at the present time.

Table No. 5—Companies and Total Well Connections of Operating Natural Gasoline Plants in the East Texas Field in January

(Data from Texas Railroad Commission)

Company	No. Well Connections	Total Daily Crude Allowable	MCF Gas Daily	Gallons Gasoline per MCF Gas
Ark. Fuel Oil Co.	1,080	23,484	6,464	2.46
Chief Refining Co.	96	1,900	816	3.3
Crescent Natural Gaso. Co.	219	5,296	1,854	.....
Gilliland Refg. Co.	145	3,010	1,071	7.83
Gladewater Gasoline Co.	169	3,976	1,480	5.46
Gregg Co. Gasoline Co.	79	1,763	900	2.7
Gregg-Tex. Gasoline Co.	1,695	33,900	9,199	2.7
Gulf Prod. Co.	439	9,568	3,320	2.84
Hanlon Gasoline Co.	1,626	28,143	11,585	2.63
Hercules Gasoline Co.	1,198	29,950	9,285	2.13
Humble Oil & Refg. Co.	1,476	33,689	8,901	4.35
Humble Oil & Refg. Co.	1,272	29,999	9,365	3.71
Lisbon Gasoline Co.	1,263	25.402	7,616	2.55
Marr Natural Gaso. Co.	7	140	2,644	0.51
Nine Oaks Gasoline Corp.	24	588	185	3.84
Parade Gasoline Co.	1,273	26,018	7,890	2.9
Sabine Valley Gasoline Co.	1,208	29,348	8,254	2.77
Sinclair-Prairie Oil Co.	1,748	42,413	13,500	2.95
Totals	15,017	338,587	104,329	3.09*

*Average.



International News Photo

D'Arcy Exploration Co., subsidiary of Anglo-Iranian Oil Co., recently began drilling the first test well under the Petroleum Act of 1934. A 135-foot derrick equipped with rotary drilling equipment capable of drilling to 15,000 feet. The drilling may require two years and cost up to $300,000. The drill was set in motion with considerable ceremony including an address by Sir John Cadman, Anglo-Iranian official

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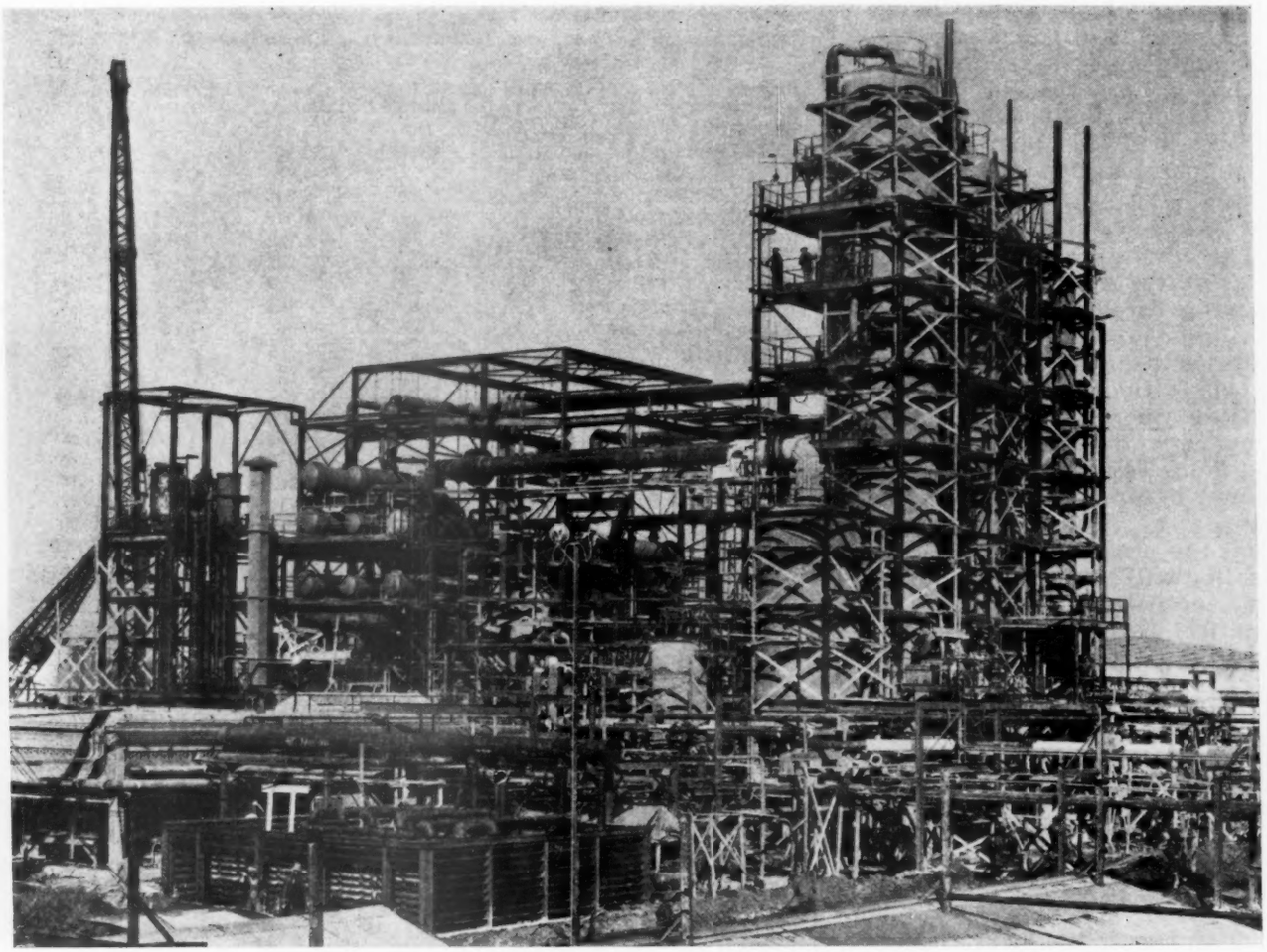

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Polymerization Applicable to Natural Gas Only in Concentrated Gas Areas

By ARCH L. FOSTER
N. P. N. Staff Writer

THE Panhandle of Texas today presents the greatest potential source of natural gas suitable for polymerization to produce high octane blending material for the production of motor fuel. East Texas is the second largest potential source.

These two fields are the greatest potential sources of hydrocarbons for polymerization because of the volume of natural gas available and because of the favorably high content of butane and propane in the gases. It is now generally conceded that polymerization can be undertaken successfully where there are large concentrations of gas, either natural or from the refinery, which is rich in propane and butane, particularly the latter.

It is the conclusion of technologists, at least for the present, that propane offers less inducement for polymerization than does butane. This is for the obvious reason that propane requires higher temperatures and pressures than butane to effect polymerization.

Considering the possibility or practicability of applying polymerization to natural gas hydrocarbons, that is, saturated or paraffinic hydrocarbons, the thermal process is here considered, and thermal methods will be indicated unless otherwise stated. We also refer to the polymerization process as now known; important developments in that process may and likely will, change conditions very materially in the future.

Many factors must be considered by the manufacturers of polymerized gasoline in determining whether or not to build such a unit, and in deciding from where that unit shall draw its charging stock. He must determine how much butane-propane is available in the gas obtainable either from his own leases or by contract with neighboring producers. He must decide whether or not butane-propane is present in sufficiently high concentration in the gas to warrant processing.

The amount of butane per thousand cubic feet of total gas will of course determine the gas capacity of the unit necessary to be built to produce a given quantity of polymerized gasoline, and will therefore affect seriously the overall cost of the unit, the cost per unit of charging capacity and of the unit's total production of finished gasoline.

Opinion varies among technologists as to the throughput capacity of the smallest unit which is practicable commercially. A figure of 2000-3000 barrels of liquefied butane daily charge has been given by one source as the smallest capacity which may be operated profitably. Because of the relatively high pressures and temperatures employed, the first cost of thermal units is relatively high. Because of the experimental status of this process as applied to saturated gases, these figures must be considered as indicating only the order of magnitude of such plant costs under a given set of conditions.

There is every reason to believe that these costs will be materially reduced as experimental work continues, as some of the pioneer installations, such as that projected by Humble, have been operated over a period, and methods and means are found for simplifying and improving both operating and installation costs.

Estimates have been made by competent authorities of unit costs of the order of $1000 to $1300 per barrel of finished gasoline daily, for a plant producing 400-500 barrels per day. Exclusive of treating equipment, this means $600,000 to $700,000 for a 400-500 barrel unit. With a suggested 60 per cent yield (by weight) of gasoline from butane, which means less than 50 per cent by volume, such a plant would charge probably about 1000 barrels of liquid butane, meaning an installation cost of $600-$700 per barrel of charge. For larger installations of, say, 1000 barrels of finished gasoline, the per-barrel cost may possibly amount to $800-$1000. Again, these estimates, while made by competent engineers, are very tentative, and must be so considered. Comparative estimates of catalytic polymerization unit costs, operating on unsaturated still gases, are not applicable here, nor can such estimats be considered as comparative.

As to amortization costs for these units, estimates are made ranging from 1½ to 5 years. Assuming a unit producing 1000 barrels of gasoline per day, if the fuel is valued at a premium price of six cents, gross income would be ($0.06 x 42,000) = $2520 per day, or $756,000 per 300-day year. To amortize a $750,000 cost in 1½ years would deduct $500,000 annually from this gross, leaving a quarter of a million for operating costs and profits. Over a five year period the annual amortization would require $150,000, leaving about $600,000 of the gross, and an opportunity for a handsome profit.

One of the serious drawbacks to adopting the five-year term is the fact that polymerization practice doubtless will change greatly during such a period, and the necessity for revamping the unit will be unavoidable, to keep up with the best practice and therefore to be able to compete with later designed plants. This is less serious than

it might be because of the fact that the greater portion of the equipment in the older plant can probably be retained in redesigning the unit.

It is not believed that any actual plant figures have been obtained on thermal polymerization of saturated gases under typically average conditions which are sufficiently dependable to warrant making estimates here of operating costs or of replacement costs or equipment life. Generally speaking, the life of tubes and other equipment exposed to the high temperatures and pressures will be relatively short, doubtless comparable to the life of similar equipment in high pressure cracking operations.

From this brief discussion, and other considerations too voluminous in discussion to introduce here, it seems obvious that not only will the polymerization plant be built in reach of high concentrations of gas, but its construction and operation will be by those companies with large resources in money, technical ability, and the necessary staffs to continue this process study in large-scale experimental manner as a technical development.

Costs for polymerized gasoline from saturates have been estimated at about 3.5 cents per gallon, with the charge stock of propane-butane valued at its fuel value, or about two cents per gallon. This estimate shows a processing cost alone of about 1.5 cents per gallon. Whether or not the manufacturer can correctly assume such a charge stock cost depends on several factors. If a surplus of butane is produced, which is not salable as natural gasoline or as bottled gas, that portion of butane may properly be charged at fuel prices. Otherwise, the butane as polymerizer charge must compete with butane as natural gasoline at natural prices, at present about three cents, or as bottled gas. The propane may properly be considered fuel gas and so priced, except insofar as the producer can find sale for it as bottled gas, a market which at present uses only a limited portion of the total available propane.

In the last analysis, butane for polymerizer charge must compete with butane as natural gasoline, and must be charged, to the polymerizer unit, at the natural gasoline price. With a 50 to 60 per cent yield of polymerized gasoline from butane, the finished gasoline must demand nearly or quite twice the price per gallon that the natural gasoline demands, in order to compete.

No data are available as to the amounts of butane in the gas of the southwest which is not now included in natural gasoline or bottled gas, and which therefore is available theoretically, at the price of fuel gas, for polymerizer charge stock. It appears reasonable to assume, however, that in the areas of concentrated gas which later in this article will be referred to, sufficient butane is available and not otherwise used, to furnish a large amount of charging stock at fuel gas prices.

FROM analyses of the raw gas produced in the Rodessa field, it is obvious that polymerization of propane and butane offers little possibility there. Natural gasoline manufacturers say they have trouble in making 26-70 natural even by extracting the last practical vestige of butane and with such propane as may properly be retained, which is little if any. It hardly seems possible that, whatever the total quantity of gas which may be produced by Rodessa at its peak, polymerization will become a factor to consider for that field.

South Texas has an allowable gas production for April of 206,359,000 cubic feet per day in the four districts, as set by the Texas Railroad Commission's order. With a nominal butane-propane percentage of 0.88 and 1.43 per cent respectively, this amount of gas would yield a total of 4,750,000 cubic feet, or about 140,000 gallons, of mixed gases (60,000 gals. butane, 80,000 gals. propane) per day for polymerization, provided the situation warrants the collection of all this stripped gas for processing. This collection of the gas is in all probability uneconomical and impractical for the present. At the two natural gasoline plants now operating, United Gas Co. at Refugio, with 25,000 gallons of natural gasoline capacity, and the Clymore plant at Refugio with 30,000 gallons capacity, (now shut down by court order) the amount of butane-propane will undoubtedly prove unattractive until polymerization is a more settled process, the yields, costs, etc. of which are more definitely known. At Conroe two gasoline plants are operating, Humble's 20,000-gallon unit, and Midland Gasoline Co.'s 15,000-gallon plant. Humble may eventually connect the tail gas of its own, possibly also of the Midland plant, into the line from East Texas, and combine this polymerizable material with that from its East Texas plants and those of the Hanlon-Buchanan interests, but so far as we know this is a development of the future.

The two areas which offer the best economic and supply possibilities for polymerization therefore are the Panhandle and the East Texas Fields. Barring the action of some aggressive organization not yet in the picture no other gas producing area in the southwest appears to offer any special inducement to the construction of a polymerizing unit, as a commercial venture.

In East Texas the Hanlon Buchanan-Humble combination is generally known, and its development is being watched by every oil company interested in gas or gasoline. It has been reported that one of the co-operating companies has available from its several plants, owned and affiliate, about 85,000 gallons, or 2000 barrels, per day of butane. So far as can be estimated, the other co-operating company has at least an equal amount of butane, making a probable total of 4000 barrels of butane which may go, along with the natural gasoline from which it is not separated in the field, to the fractionating and polymerization units at Humble's Houston refinery.

Here the raw gasoline will be fractionated to separate natural gasoline from butane and propane. With the tentative yield figures referred to above, this quantity of butane alone, without considering the propane

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which may or may not be included with the butane, should produce 2000-2500 barrels of high octane number polymerized gasoline daily. The construction work on the Houston unit is already under way.

In East Texas, as shown in tabulated data given elsewhere in this issue, the number of wells connected to gasoline plants is approximately 15,000, out of a total of nearly 20,000 wells in the field. Informed engineers in this field believe that, within a few months, 3000 to 4000 more wells will be connected to natural gasoline units, of which 18 are now operating or operable in the field. It is estimated that probably 2000 of the wells, out of the probable 21,000 final total will not be so connected for economic reasons.

These 15,000 wells are producing natural gasoline at the rate of more than 300,000 gallons per day, which proportionately may be increased to approximately 400,000 gallons per day when all are connected. In this gas the amounts of butane and propane average about 7.0 and 15.3 per cent, or about 2.26 and 4.2 gallons per thousand cubic feet, respectively. On this approximate value, the total butane theoretically available for polymerization in East Texas from the more than 100,000,000 cubic feet of gas now processed or connected to gasoline plants, is of the order of 235,000 gallons per day. When all 19,000 or more wells are connected this quantity of butane may be 300,000 gallons per day, as a maximum.

As has been pointed out above, a large portion of this, possibly as much as 175,000 gallons per day, may be processed in the Humble plant; this quantity will of course be determined by the number of wells from which butane may be drawn into the co-operating gasoline plants, by the maximum capacity of the polymerizing unit, and by the amount of polymerized gasoline the company wishes to produce.

OF THE remaining hydrocarbon gases in East Texas suitable for polymerizing, the major portion is controlled by Sinclair, connected to about 3000 wells to supply two plants at Gladewater, and Arp, and by a few other companies with different capacities. In order to make another polymerization unit, similar to the Humble, a practical possibility it will be necessary for several of these companies to pool resources of butane in some practicable manner. With the Sinclair interests in the lead, it might prove practicable to operate these plants independently in extracting the natural including butanes and propane, and to combine by a pipeline gathering system the raw gasoline at a central fractionating-polymerizing plant, as Humble and Hanlon-Buchanan plan to do. Or, the propane-butanes from the overhead line of the individual gasoline plant stabilizer columns might be gathered at a central point via pipelines and there polymerized.

At present there appear to be strong deterrents to either plan. The greatest obstacle is doubtless that of lack of definite knowledge of the yields, costs, etc., of such a plant. The other is the large and very easily calculable cost of constructing the pipeline system for handling all the raw unstabilized gasoline, or the propane-butane gases from the several stabilizers.

The Sinclair interests have all the technical talent, and financial and other abilities necessary for heading such a plan. That organization appears to be watchfully waiting to see what results are obtained from the Humble experiment, which is being carried out by that subsidiary of Standard Oil Co. of New Jersey, one of the five cooperating companies forming the Polymerization Process Corp., with Phillips Petroleum Co., Standard Oil Co. of Indiana, The Texas Co., and M. W. Kellogg Co.

It is understood that Sinclair is unwilling to either contract its butane-propane to another organization for processing, or to tackle the at present decidedly experimental effort of erecting and operating a polymerizing unit of its own. No other large company has enough gas in the field to warrant construction of such a unit.

These data and considerations show that the East Texas field, with its relatively very high concentration of polymerizable hydrocarbons can easily support another polymerization unit similar to the Humble venture. Doubtless the undertaking of such a plant wil wait on the success of the Humble unit. With a six months' period of op-

Analyses of typical raw gases, from Mid-Continent fields

Location	Longview	Joiner	Kilgore	Rodessa	Rodessa	Rodessa	Rodessa	Rodessa	E. Texas	South Texas
Date of Analysis	Apr. 16, '31	Apr. 16, '31	Apr. 16, '31	Mar. 14, '36	Mar. 14, '36	Mar. 14, '36	Mar. 14, '36	Mar. 14, '36	Mar. 14, '36	Mar. 26, '36
	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
COMPOSITION:										
O^3	.32	.22	.34	.00	.00	.00	.00	.00	.00	.....
CO^3	.43	.33	.22	.70	.60	.90	.90	.00	.00	.00
Methane	62.77	68.41	43.99	77.72	74.24	75.92	77.74	92.53	45.65	92.61
Ethane	17.39	9.86	15.57	8.08	9.49	7.16	8.61	3.85	18.34	4.32
Propane	11.54	11.29	23.14	4.20	5.76	5.91	4.42	1.57	23.95	1.43
Butane	3.68	5.76	11.43	3.51	5.25	4.37	3.46	1.09	10.02	iso 0.41 n- 0.47
Pentane	1.34	1.97	3.71	1.70	1.44	1.95	.96	.96	2.04	0.76
Hexane, or Heavier	.00	.37	1.14	.85	1.51	1.11	1.17	.00	.00	
N^3	2.53	1.79	.46	3.24	1.71	2.68	2.74	.00	.00	.....
Gals. M-Cu. Ft. (Based on 26 lbs. Reid V. P.)	1.644	2.699	5.469	1.344	1.624	1.625	1.182	.73	3.95	0.45

eration that unit may be expected to show with fair accuracy what may be obtained in yields and quality of product, what costs are, and what changes are to be made in equipment and process.

What East Texas possesses in the high concentration of its propane-butane percentages, the Panhandle area, greatest gas field the world has even seen, possesses in even greater degree in the quantity of gas produced, and the total propane-butane available. Producing only 0.3 to 0.4 gallons of natural gasoline per 1000 cubic feet, and with its total production of gas in imminent danger of being reduced by practically a billion cubic feet per day (the amount which has been extracted for natural gasoline and "popped" to the air daily until state regulations were invoked), the Panhandle still has by far the largest production of propane and butane of any known area.

Careful estimates made recently indicate that a legal demand for 1400 million to 1500 million cubic feet per day exists for Panhandle gas. The propane-butane content of this gas obviously varies over fairly wide limits. The analyses of the gas processed for natural by one large operator in that field show that gas after processing for natural gasoline contains about 0.5 gallon of butane and about 1.0 to 1.1 gallons of propane, per 1000 cubic feet. From these amounts, assuming they are typical and indicative, 1400 million feet of gas will yield 700,000 gallons of butane and 1,500,000 gallons of propane for processing.

Such quantities strain the imagination, and calculations of the theoretically possible production of polymerized gasoline from them become ridiculous or misleading. In the Panhandle, even more than in East Texas, physical, economic and geographical considerations will control the development of polymerization in that huge area. Analysis figures of course vary widely, both seasonally and according to the grade of natural being made, especially as to the residual butane content.

In February, 1936, nearly 1,200,000,000 cubic feet of gas was taken daily by gasoline plants in the Panhandle, of which 540,000,000 feet was evidently sour gas, being utilized in carbon black plants. The remainder contained, according to the analyses taken as typical and using the lower value of 0.5 gallon, the rather huge figure of 330,000 gallons of butane per day as theoretically available, along with twice as much propane. Practically speaking, this amount is not really available. Various uses of the gas on leases and around plants reduce the total amount of residual gas which is available for a hypothetical gathering system by 150,000,000 feet, according to Texas Railroad Commission figures.

ONE of the major drawbacks to this hypothetical gathering system as a practicable proposition is the tremendous cost of the piping. Added to the cost of the thermal polymerizing unit, which for a very large plant may be reduced to reasonably low figures, this gathering system may offer for the time an insuperable obstacle to a profitable operation, except for those few companies operating their own plants, in the neighborhood of other plants which may be brought into a co-operative arrangement for collecting residual gas for polymerizing plant charge. The large fuel gas companies, listed elsewhere in this issue, may find it profitable either to install a polymerizing unit to process the gas going into their lines, or to lease that privilege to another company for all or part of their gas throughput.

It is generally understood that Phillips is going forward on a program looking to the construction of one, possibly several polymerization plants, operated in conjunction with its natural gasoline plants and its Borger refinery, where one large and essentially experimental unit has been operating more than two years. As to when, where, how many and what capacities of units will be built has not been divulged.

Skelly and Shell each have enough gas, or their plants are within reach of enough additional residual gas, to make those companies possibilities for building polymerizing units. To date, no indications have been given that either has reached the plant-planning stage. Estimates have been obtained, it is understood, on the probable cost of units of a given size or sizes, for building in the Panhandle or elsewhere in the Mid-Continent. Similar estimates are asked for by practically every large refiner and many gasoline manufacturers in that area, and do not necessarily indicate any intention of building in the near future. Skelly will be guided no doubt by the possibility of immediate returns on such an investment, rather than to consider it an experimental effort. Shell is interested in and part owner of the Universal catalytic process and developments, is operating two or three plants, and according to all information obtainable, is watching thermal polymerization closely without being committed to any definite program on it. Sinclair's position in the Panhandle, it appears, corresponds to its position in East Texas and elsewhere—watchful waiting on developments.

The summation of so large a question as polymerization of saturated gases in the Mid-Continent in a relatively short article is of necessity scant in detail. An exhaustive study of even the most important factors concerned, the positions of the larger companies and of the numerous smaller gas producers, can be at best only referred to or hinted at, rather than be outlined clearly.

It is fairly obvious now, after studying the whole situation, that the utilization of hydrocarbon gases, butane and propane, in the Mid-Continent is on its way, but slowly. A very small number of units probably will be built there in the near future. The adaptation of thermal polymerization to the possibilities in this area is a work for the larger companies of which one or two will lead the way this year. The process is feasible at present for those companies having large resources of polymerizable gas easily and cheaply available at central points.

Natural Gasoline Markets Will Equalize Reduction in Panhandle Production

ALL the modern methods used to transport light oils also are utilized in the movement of the Mid-Continent's large daily production of natural gasoline to its far-flung markets.

Some of the natural gasoline travels to destination entirely by rail; some by pipeline a portion of the way, then by rail or rail and water the remainder of the distance. Large quantities are transported by rail to tidewater and then carried by tankers to scores of coastwise and foreign ports. Within the past two or three years there has been a sizable increase in the volume of material moved in tank trucks from manufacturing plants to adjacent refinery centers.

Under normal conditions not all of the districts in the Mid-Continent can ship natural gasoline advantageously to all of the markets supplied by the Mid-Continent as a whole; but the natural gasoline market never has been noted for its normalcy. The result has been a consistently widespread distribution of the Mid-Continent material irrespective of transportation costs involved. The market is extremely sensitive to the law of supply and demand, with the result that the route the material takes to market from month to month is determined largely by the price being paid.

Past history has shown that if the price of natural gasoline in the key market—Group 3 (Oklahoma) — is abnormally low as compared with the refinery price for U. S. Motor gasoline, middle western jobbers become heavy buyers of the natural for use in blending their own motor fuels. It also is an indication export orders will be placed at that low figure, or that some of the production at least will go into storage at the Gulf for export business.

On the other hand if the price of natural gasoline is slightly above its normal price relationship with U. S. Motor, the jobbers are not interested in the market, and the exporters show little interest. When this is true the natural is in demand from local refiners and for coastwise shipment to plants on the seaboard.

Under these conditions is it extremely difficult to estimate with any degree of accuracy what percentage of the Mid-Continent's natural gasoline production in any one month or even a longer period moves to the various markets.

An accurate picture can be drawn, however, of the transportation methods and costs from the various manufacturing districts to the various markets, to show what districts can ship to those markets most advantageously under normal conditions.

Natural gasoline manufacturers in the Mid-Continent are grouped, for freight rate purposes, in virtually the same way as the refiners have been grouped. In fact the freight rates for natural gasoline and light oils are identical.

Group 3 (Oklahoma) accordingly is the key market for natural gasoline in the Mid-Continent and in the final analysis is the controlling market in the determination of prices for the natural even when shipped far outside the Mid-Continent area.

Table No. 1—Comparison of Freight Rates for Natural Gasoline from Various Manufacturing Districts in the Mid-Continent

From	To Chicago	To Gulf Coast Points West of the Miss.	To Gulf Coast Points East of the Miss.
	(Cents per Gallon)		
Group 3 (Oklahoma)	2.44	1.52	1.52
Panhandle	2.61	1.55	1.72
North Texas	2.71	1.42	1.42
East Texas	2.61	1.06	1.42
Louisiana-Arkansas	2.44	1.06	0.79
New Mexico	2.84	1.65	1.65

THE accompanying Table No. 1 shows the comparative freight costs, in cents per gallon, from the major points of origin within the Mid-Continent manufacturing area to common destinations. There are many exceptions and the table is shown merely to illustrate the general freight rate structure.

It will be noted from the table that the Group 3 (Oklahoma) manufacturers and the Louisiana-Arkansas manufacturers have identical freight rates to Chicago, and that those rates are from 0.16 to 0.17 cent a gallon under the rates from other districts. Chicago as used in this table represents the so-called Standard of Indiana territory, since what is stated with reference to that destination is applicable also to virtually all other destinations in that area.

In spite of this freight advantage, the amount of natural gasoline which moves as such into the Standard of Indiana territory from either Group 3 or Louisiana-Arkansas is relatively small as compared with the total natural gasoline production within the Mid-Continent.

This is due to the fact that there are, in Oklahoma particularly, many short haul blending rates which permit refiners within the Mid-Continent proper

to bring the natural gasoline to their refineries for blending into the middle west.

By looking again at the table and following the Louisiana-Arkansas classification over the "Gulf Coast East of Mississippi River," it can be seen why very little natural gasoline moves from that area into the middle west. There is too great a freight advantage there for buyers to pass up any of that material and make manufacturers seek markets in the middle west.

At times, however, there is a fair sized volume of natural gasoline moved from certain areas in the Mid-Continent, such as Oklahoma, Panhandle and North Texas, to middle western points primarily because the Mid-Continent refiners are not using a sufficient amount of the material for blending to prevent a surplus appearing on the market at cut prices. When the price gets low the jobbers begin buying and doing their own blending.

IT ALSO can be seen from the accompanying table why, under normal conditions, very little East Texas natural gasoline finds its way into the Standard of Indiana territory. It also can be seen why, for example, with natural gasoline available in all districts and just so much coastwise and export business coming in, the districts other than Louisiana-Arkansas and East Texas must compete on the same freight rate basis with a resultant lower netback at plant, or wait until all the available material in those districts has been bought and the coastwise and export purchasers begin looking to other areas for the remainder of their requirements.

It is because of the highly competitive conditions existing, and also due to the fact that manufacturers are continually "swapping" with each other that natural gasoline from all of the districts is very likely at times to be moving to virtually all of the various markets.

If there is, for example, an attractive volume of business in the middle west and the export market is quiet, the Texas manufacturers are very likely to go after the business by bidding on the basis of the freight rates of the manufacturers normally getting the business. A manufacturer in the East Texas area, for example, may have an order for material to move into the Standard of Indiana territory, but may have no business at all at the Gulf. And a manufacturer in Oklahoma may have a nice order from the Gulf area but no business in the middle west. It does not take long for the manufacturers to make a swap which gives each of them a freight advantage they otherwise would not have had.

A SIZABLE volume of natural gasoline is moved on a coastwise or export rate from various Texas districts to Gulf coast refineries, where it is used in the manufacture of motor fuel which later is moved by tanker coastwise to consuming centers. Some of the material also is used to manufacture gasoline for export trade.

In addition to this business, several manufacturers have their own terminals at the Gulf and engage in the export and coastwise business by moving the unblended material to various points, where it is later made into motor fuels. The curtailment of natural gasoline production in the Texas Panhandle is likely to have far less effect on the general natural gasoline marketing picture than would have been the case with similar reductions in output in any one or more of the other manufacturing areas in the Mid-Continent.

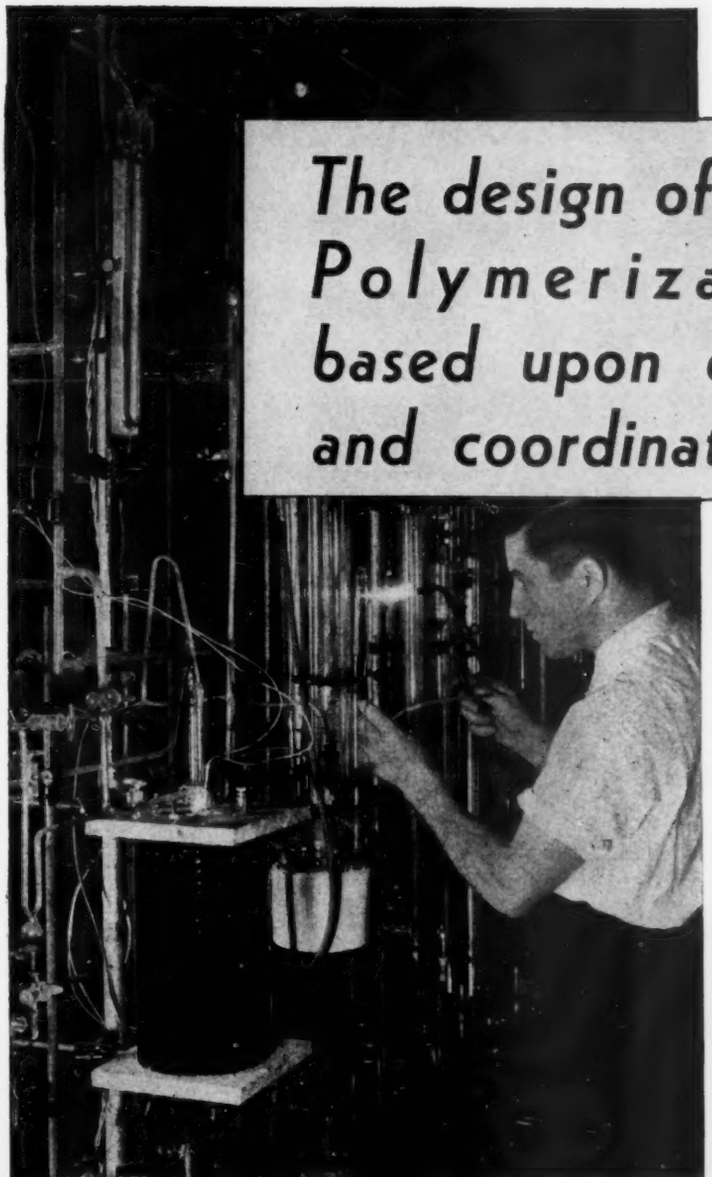
This somewhat unusual situation has been due to the fact that for many months a major portion of the Panhandle production has been moved under contract to one large manufacturer-refiner who used the material either at the refinery or shipped it through a gasoline pipeline to other destinations. The rank and file of natural gasoline buyers accordingly had ceased to look to the Panhandle as a consistent source of material, except as this large buyer might have a surplus at times which was sold in tank cars, shipment being made from its East St. Louis pipeline terminal.

With production reduced considerably in that area, this large buyer is expected to be an active bidder for any material which may appear on the market from time to time. The buyer will take the material, it is anticipated, just as long as the price does not get high enough to wipe out the economical advantage of movement of material by pipeline.

Then the west and southwest Texas refiners undoubtedly will continue to buy material either in the Panhandle when it is available, or in the New Mexico district. There is a freight advantage from the Panhandle and New Mexico to Colorado, Wyoming and Montana refining points and those buyers were expected to remain in the market as long as they can obtain the material at a price which will permit blending.

UNDER these conditions it is believed generally that there will be no material shifting of the market necessary as a result of the curtailment in the Panhandle. The East Texas natural gasoline will continue to move primarily to the Gulf coast for blending at Gulf coast refineries or for movement on to the Atlantic coast or to foreign ports for blending. The Oklahoma production will be used primarily by local refiners, as will most of the North Texas natural gasoline production, with surpluses at times finding their way both to the Gulf coast and into the Middle west.

The Louisiana - Arkansas manufacturers will look toward the Gulf coast for most of their business, after the local refiners are supplied. The southwest and Gulf coast manufacturers will move their materials on short haul rates to Gulf coast plants or terminals. The Kansas production will continue to be absorbed by the Kansas refiners. The Panhandle and New Mexico manufacturers will have their own market close to home without having to push any appreciable amount of material into the other markets.



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LICENSING AND CONSTRUCTION AGENTS under United States and Foreign Patents for: **Gasoline Products Company, Inc.** - Cross - Holmes-Manley - de Florez - Tube and Tank - Combination · Cracking Units ••• **The Polymerization Process Corporation** - Gas Polymerization Units ••• **The Gray Processes Corporation** - Clay Treating ••• **Standard Oil Company** (New Jersey) - **Standard Oil Company** (Indiana) - **Union Oil Company of California** - Lube oil refining with Propane and Phenol ••• Deasphalting - Dewaxing - Solvent Extraction and Acid Testing Plants

Extensive use of glass in the sidewalls of the station building permit an unobstructed view of the approaches to the islands, rest rooms and lubritorium at this station owned and operated by Ray R. Ford, at Cucamonga, Cal.

Brake Shoe Lining Taken On To Meet Station's Night Expenses

CUCAMONGA might not mean much to most people but to the California Indians it meant "Many Waters" and to Ray R. Ford, Texaco bulk commission agent, it stands for "Money in the Bank".

Upon first appearance this town of many waters and few houses doesn't look as though it offered any oustanding opportunities. It is about 45 miles east of Los Angeles on U. S. Highway 66, which is the main route of travel for tourists between southern California and points east, via Las Vegas, or for motorists making week-end trips into the nearby San Bernardino mountains. However, it also marks the limit of city gasoline prices and has long been a favorite stopping place for east-bound motorists.

This habit of the average traveler passing through Cucamonga presented an opportunity to Ray Ford about six years ago and today, in addition to his duties as commission agent, he runs the most modern and up to date service station in the territory.

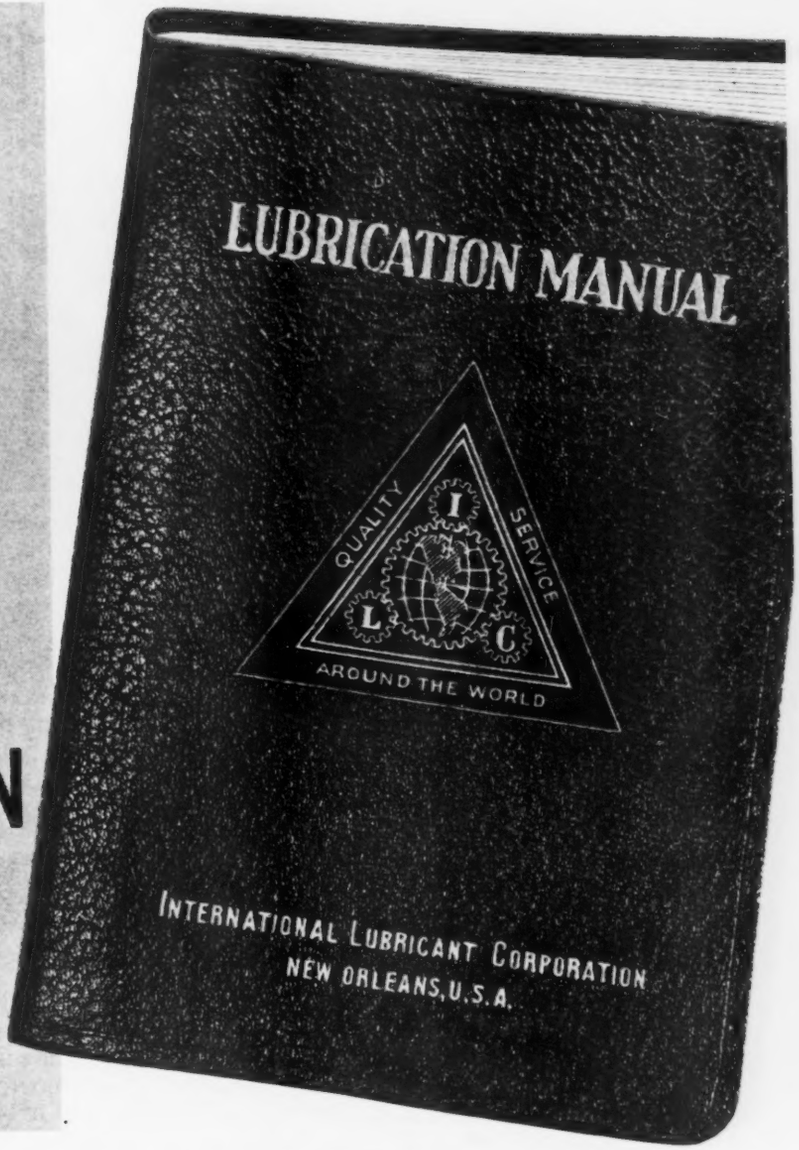
In those six years he has had a retail outlet on three corners of the town's principal intersection. From his original stand on the northeast corner he moved to the southwest location to make way for a new bank building and to get on the favorite side of traffic going east into the area of higher gasoline prices. His quarters were cramped here, however, and encroaching business buildings cut off the view of his station from the west. These objectionable features resulted in a deal with the owner of a large orange grove for a 90 by a 100-foot ground site on the southeast corner.

When it was decided not to move any of the old facilities but to build the new station from the ground up, Mr. Ford designed his own set of plans and incorporated in them features his experience had demonstrated were essential for efficient and profitable operation. An accompanying photograph shows this station from a point in the middle of the street intersection.

The new station cost between $8500 and $9000, including buildings, paving, and all but the moveable equipment; but this investment was completely justified in the first three months of operation by a 40 per cent increase in gasoline business and a commensurate gain in service and accessory "plus" sales.

A good portion of the gasoline increase was credited to a more advantageous layout of equipment and facilities. Where the previous station had pumps only on the highway side, the new unit has three along the highway and two for service of traffic on the cross street — the premium grade is omitted. These pumps are all the metered, computing type, providing fast service. Tire and radiator service for cars at the pumps is speeded up by air and water connections in under-

know the HOW *and* WHY *of* LUBRICATION FOR SAFETY



It is estimated that the "Lubricate for Safety" campaign will be worth conservatively 200 million dollars to the oil industry.

To obtain your proportionate share of this increase in business be sure to aggressively foster and take advantage of the movement.

International Lubricant Corporation has had prepared a 78 page looseleaf leatherette bound manual covering many phases of lubrication.

It explains the different types of greases and oils; gives their uses; tells how they should be applied.

Passenger cars, trucks, tractors, Diesel Engines, Compressors, Turbines, Electric Motors, Generators, Ice machines and Steam engines are fully covered.

This book will greatly facilitate your efforts to obtain maximum results from the "Lubricate for Safety" campaign. Knowledge is power—and in selling, it is the certain road to results.

"Lubrication Manual" has cost us several thousand dollars to produce but it is not for sale.

It was prepared for our customers. We take this means of inviting all our good friends who have done business with us during the past year to write for their copy on their letterhead. None will be sent unrequested.

Get behind the "Lubricate for Safety" campaign and get ahead in profits.

FOR SALE ONLY TO JOBBERS AND REFINERS

COMPLETE EXPORT FACILITIES

WITH QUALITY COMES LEADERSHIP

QUALITY SERVICE AROUND THE WORLD

International Lubricant Corporation

NEW ORLEANS LOUISIANA

Rectangular, two-shelved rack for the display of accessories in the Cucamonga station of Ray Ford

ground wells at both ends of each island.

All-steel construction is featured and display possibilities enhanced through a lavish use of glass. Wide panes of clear glass on all sides of the sales room give an unobstructed view of approaches to the islands, rest rooms, and lubritorium. Two panels of frosted glass above the windows offset the high stretch of unbroken clear surface that would otherwise spoil the architectural lines, but still give additional diffused light in the sales room during the day and permit greater illumination outside at night.

The design incorporates the lube room and a large, adjacent storage room into the main building. The lubritorium and store room extends to the back of the salesroom and make approximately the same angle with each canopy.

Mr. Ford is a firm believer in the benefits to be derived from having adequate and well appointed rest rooms for highway traffic. He put these facilities in a separate building along the back property line, but still in plain view from the highway. Floors in these comfort stations are of black and white tile and the facilities include wash basins with liquid soap, mirrors, toilets, and a urinal on the men's side.

The following remark made in the men's room was overheard by Mr. Ford: "You know, it's a pleasure to get into a place like this. For years I used Blank gasoline, but one day I stopped at this place and the facilities were so much better than those at my regular station that I decided this man was showing enough interest in the comfort of people passing through to warrant my business. I've been coming back ever since."

The station runs on a 24-hour schedule, to accommodate all night highway traffic, but Mr. Ford found the resulting business would not, in itself, pay the additional overhead and, to meet this expense, he installed a machine for lining brake shoes. The machine cost him about $150 and he has between $200 and $250 invested in assorted lining and in engineered sets, in which the holes are drilled and the lining cut to length ready to be riveted on the shoes. He estimates the stock will turn over about nine times during the year at a profit of from 20 to 50 per cent each time.

His plan is to wholesale the lining to dealers in the surrounding country and he put in the special equipment so the man on night duty could line the shoes when he was not busy with other work. It has worked out very satisfactorily. There are extra shoes of popular sizes on hand and these are relined in advance so a dealer can bring in a set of shoes and make an exchange without waiting. The station is also equipped with a $60 hydraulic wheel puller that will remove any wheel without injury. This is rented out to the neighboring dealers at a nominal figure to help them in their sale of brake lining.

This station is a pivotal account for tires and batteries. That is, other dealers in the surrounding territory get their supplies through Ray Ford. This is extended to other lines of automotive necessities and as a result accessory items form a good share of the "plus" sales of the day's business. An exceptionally full line of accessory items is carried and displayed on a rectangular, two-shelved, rack shown in an accompanying photograph. Included among this stock are: radiator ornaments, flash lights and batteries, a large assortment of fan belts, tube repair kits, top dressing, gas tank caps of the plain and locking type, glass cleaner, patches, inner flaps and drop center rim flaps, polishes, waxes and, in addition to the wide assortment of car batteries, tires, and tubes, the station also handles a line of auto radios.

The accessory rack is placed in the center of the sales room on the red cement floor, which has been waxed to a brilliant luster, and the resulting display is very attractive. The clear glass windows permit it to be seen from any point in the station yard.

A final detail of the station's layout not to be overlooked is the way the pavement has been laid to facilitate traffic movement. Because the yard borders on the highway it was found possible, by constructing suitable, drainage underground, to lay a three-inch asphalt pavement over the entire yard and blend it in with the highway so there are no defined driveways.

To Sell Oil Refrigerator

The Ruch Oil Co., Napoleon, Ohio, distributor of Socony-Vacuum products in several counties in northwestern Ohio, has been appointed distributor of the Superfex oil burning refrigerator, manufactured by the Perfection Stove Co., Cleveland. The Ruch Oil Co. is establishing a specialty selling organization which will also merchandise other household equipment, including electrical appliances.

ADVERTISING PAGE REMOVED

Random Notes of a Rambling Tourist In Florida

By WARREN C. PLATT
Editor

When a Florida town gets so broke it feels it has to raise the already largest gasoline tax in the country a penny, the retailers at the edge of town grab at the business by posting signs like the following. These out of town dealers generally get enough business so that the dealers in town whose customers have to pay the extra tax, lose a large part of their business. Then the town repeals the tax

PENSACOLA, FLORIDA

HAVING gotten the main Florida story, how important the oil industry is to the state, how there wouldn't be much here if not for gasoline and so on, off my chest, I can now ask every one to huddle in my corner and get a little every day oil industry gossip. There is gossip down here just as anywhere else even though eleven major companies have the business almost all to themselves.

It's not quite all to themselves because they have let in the three big tire companies, each tire company having enough of a guaranteed margin in its contract to raise hob with the oil business. Cut prices up to 5 cents are heard of in regard to the tire companies whom these eleven oil majors love so well that they give them a fresh butcher knife every morning so they can cut the majors' gizzards out before breakfast.

How the majors must love their own gizzards served up every morning! One would think they would get tired of them. Most mortals can't stick to ham and eggs every morning of the year. But the oil majors have a plentiful supply of gizzards seemingly and they just dote on the taste of them, fried with a 4 to 5-cent cut price.

There are 33 of these sharp butcher knives—or tire stores—in the state, as follows: four in Jacksonville and Tampa; three each in West Palm Beach, Miami, St. Petersburgh, and Orlando; two in Pensacola, and one each in St. Augustine, Daytona, Delray, Ft. Lauderdale, Ft. Meyers, Clearwater, Lakeland, Gainesville, Ocala, Tallahassee, and Winter Haven.

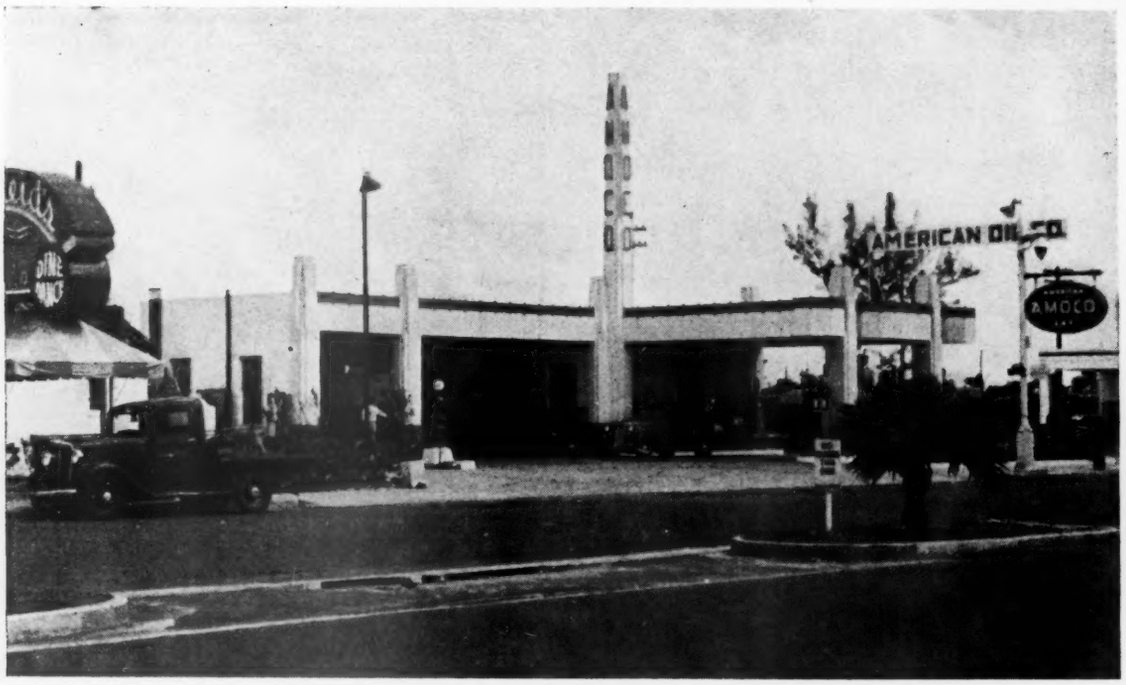
These and Independent combination tire and gasoline stores do a real business. Most of them are large and the people seem to like them, whether they cut the price or not.

There are some good Independent tire and gasoline stations here that are getting good business at regular prices, according to report, and growing all the time. That probably is because their owners are on the job personally all the time seeing that their employes move fast, which every one does not do down here.

But the stores of the three major tire companies are the bane of every one's existence. Its particularly trying for a big company manager responsible for sales and not responsible for any of these three funny tire company gasoline contracts, to have to deliver them his own gas and then fight them for business without cutting the price, at least without cutting too much. The presidents of these contracting oil companies might have an entirely different opinion of the value of these cut price tire contracts if each took personal charge of their Florida territory for a while and tried to get some business and a profit at the same time.

Independent Jobber's Gasoline Brands Scarce

The Independent jobber who flourishes so much elsewhere in the country only exists in the person of seven companies, being the Capital City Oil Corp. at Tallahassee; the Colonial Oil Co., Jacksonville; Gardner Oil Towing Co., Pensacola; Mutual Oil Co., DeFuniak Springs; Spur Distributing Co., Tallahassee; Southern Oil Stores, Inc., Pensacola; and the Sunny State Oil



An American Oil Co. station at Miami

Co., Panama City. Their gasoline gallonage will total about 200,000 gallons a month out of a total for the state of more than 25,000,000 gallons for January. The reason is it has been so cheap to get petroleum products into Florida by tanker and barge that the railroads could not hope to compete no matter how low a rate they charged. As it took a fairly sizeable investment warranted by good gallonage to start on a tanker basis, competition has stayed out. However as the gallonage of the state has grown of late years and Independent refiners have learned more about tanker and barge business, some Independent bulk plants have started.

But the battle for business is so hard that no great increase in new competition can be expected at least right now. The price cutting charged to the tire companies has brought the "Rochester plan" of operation which here amounts to adding 0.75 cent to the laid down seaboard spot price for terminal charges which gives a tank wagon price without tax at Jacksonville of 8 cents. Freight to interior points is added. The small new Independents will require some time to get their names and brands established before they can become any sizeable factors in the market.

New Wrinkle on Signs By Orlando Retailer

Down at Orlando a retailer posts the regular price but when he sees a likely looking prospect coming down the street he steps off the curb and opens up a special folding sign he has in his hand, thus exposing only to the view of the approaching motorist the "confidential" information that he can get a 2-cent discount if he stops there. It generally works.

Roosevelt's New Ditch Unexpected Boon to Oil

The digging of the still prospective and much disputed Florida ship canal across the north end of the state by President Roosevelt with WPA money, has closed some oil company service stations. The companies involved don't much care if they stay closed providing the cause continues or even spreads. The explanation for this phenomenom is that WPA wages swinging a pick on the ditch were a couple of dollars better than running a service station on a leased or commission basis, so the boys lit out for more money.

Much to the oil companies surprise the likely men of Central Florida all got jobs and the companies simply had to close the stations for lack of any one to work at them. That is sure a sign of returning prosperity.

One wonders how many other stations over the country are closed or may be about to close for the same reason. There is no question but quite a few thousand stations would not be running in normal times with the same rate of net return to their operators as has been possible these last few years. Running a station at a little bit more than nothing was better than not eating at all. Our problem of too many stations may be cured easier and quicker than we think as times improve.

Slot Machines to Promote Gasoline Price Cutting

A new menace is facing the oil business in this state. It is the slot machines that the Florida legislature recently legalized and which are making so much money for their owners and operators that it is one of the outstanding crimes of the state's history. The right to operate these machines is limited by city or county permit so you have them pretty thick all over the state except in St. Petersburg where in order to play them you must sign a roll and give your life history.

Mostly these machines are in small places of business. Gaso-

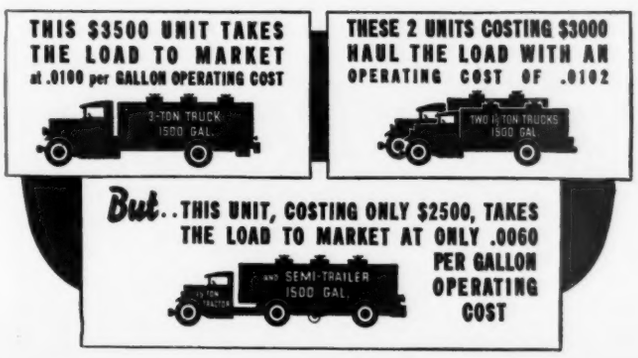
Save 4/10 of a cent per gallon!

● Semi-Trailers, on the average, haul gasoline for 4/10 of a cent per gallon less than straight trucks of equal capacity! Naturally, this figure varies with individual operations, but the saving, in an anywhere near ordinary set-up, equals 30 to 50 per cent of haulage costs.

Think what this means—multiply this saving by your yearly gallonage—and you'll see why so many Oil men are making hundreds of dollars more profit each year with Fruehauf Trailers.

And you get more than economy, for with Fruehauf Semi-Trailers you get a lower center of gravity, greater braking area, increased flexibility . . .

The complete story—how and why Semi-Trailers save money, other advantages, and actual figures from users—is written up for you in a 24-page booklet, sent FREE on request.


THIS $3500 UNIT TAKES THE LOAD TO MARKET at .0100 per GALLON OPERATING COST
3-TON TRUCK 1500 GAL.
THESE 2 UNITS COSTING $3000 HAUL THE LOAD WITH AN OPERATING COST OF .0102
TWO 1½-TON TRUCKS 1500 GAL.
But..THIS UNIT, COSTING ONLY $2500, TAKES THE LOAD TO MARKET AT ONLY .0060 PER GALLON OPERATING COST
5-TON TRACTOR AND SEMI-TRAILER 1500 GAL.

FRUEHAUF TRAILER COMPANY
"ENGINEERED TRANSPORTATION"
REG. U. S. PAT. OFF.

FRUEHAUF TRAILER COMPANY
Detroit, Michigan

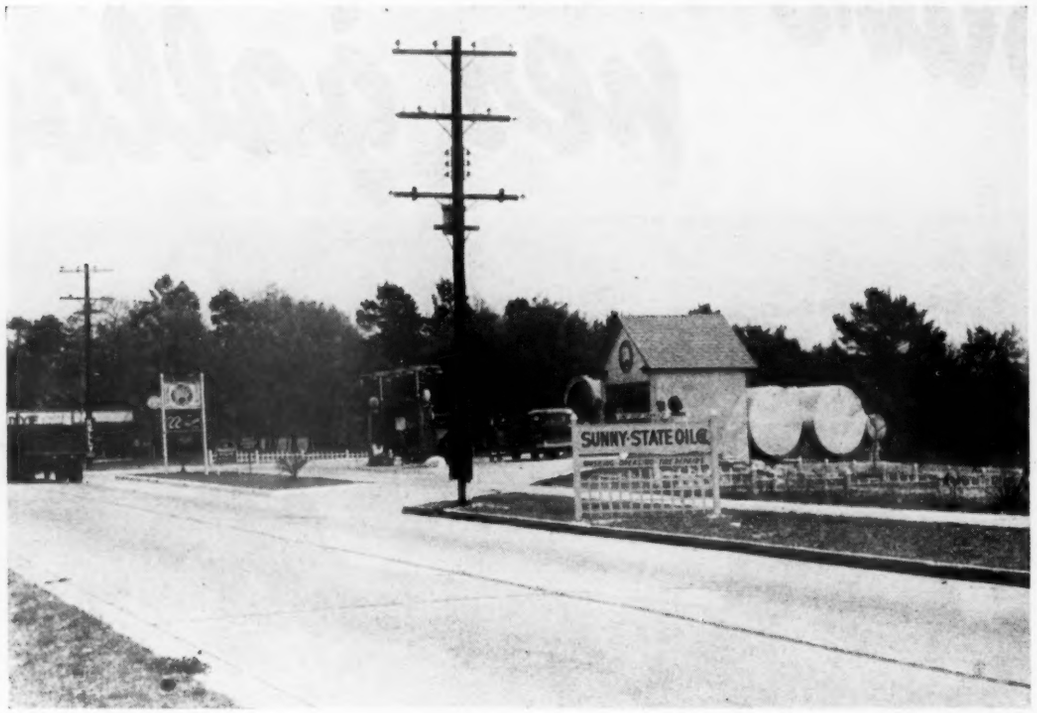
Gentlemen: Send me your 24-page Oil booklet explaining how Fruehauf Trailers cut Oil haulage costs, with actual figures from users. This does not obligate me in any way.

Name_____

Address_____

City_____ State_____

This inexpensive but good looking station is on the main shore road just outside of Panama City, Fla. It is really a marine barge terminal but as this was the farthest end of the barge's trip they found they could supply it better by tank truck. The barge tied up to a small dock just back of the trees and the gasoline was pumped up to these station tanks. Florida has so many miles of sheltered water and so many of its towns and highways run along the shores that more of these small barge and tanker terminals can be expected. There is no reason why a barge should not operate just as a large truck does on its route



line retailers are putting them in and report they are making as much as a hundred dollars a day net from them. The trouble has not started yet but oil men figure that it is only a question of time when the gasoline retailers equipped with slot machines will cut their gasoline price to any depth in order to get in trade for the slot machines. These machines are reported to pay anywhere from 60% to 80% of the total "take" to their owners and operators. They can be set for any "profit" desired by the operator, that is the man running them, not playing them.

Service Stations Increasing in Miami

Service stations in Miami proper — Miami Beach and Coral Gables are separate suburbs — are increasing again. According to the city license commissioner they have numbered in the years as follows:

Year	No. of Stations
1928	315
1929	319
1930	351
1931	376
1932	363
1933	362
1934	382
1935	395

License fees are $27.50 for a 4-pump station and $5.50 for each additional pump. The state licenses gasoline stations also but does not keep any separate record of them, however it is estimated there are some 7000 in the state at the present time.

Florida Adopts Heating and Takes on Fuel Oil

Florida in the past has not bothered much with any heating equipment. An open wood fire a few times a year was all that was necessary for southern Florida and the same fire a few more times up north took care of the natives there.

Maybe the seasons are getting colder, but at all events with the coming of the people from the north who demand the latest in house comfort, hotels and homes are installing tiny heating outfits that use oil. There has also been a good market for portable oil heaters as well as electric heaters. Kitchen stoves run on oil or electricity with some on gas.

The Belcher Oil Co., at Miami, which has devoted its attention for 20 years to fuel oil, has added an air conditioning subsidiary which is installing such outfits in the newer homes. They keep the house cool in summer and warm in winter, however their winter consumption of oil is not much over 200 gallons for the season.

Industrially Florida has gone to fuel oil. No coal is mined in the states because there isn't any and it costs quite a bit to bring it in. Because of soot its use is barred in Miami. Ed Belcher of the Belcher Oil Co., estimates the state is now consuming some 4,000,000 barrels of fuel oil in all industrial uses. There is no manufacturing as we know it up north, but a lot of steam and power has to be manufactured for various purposes and the start of it is fuel oil. The Belcher Oil Co., having pioneered in it when the big oil companies did not think it

Every INCH a TOWER of STRENGTH

A special gasoline hose that endures merciless handling without breakdown . . . fortified by a flexible, non-kinkable metal inner lining, in a tube of oil-resisting compound, jacketed in tough, seamless woven cotton. This briefly suggests the superlative quality of U.S. Giant Gasoline Hose. And it explains, too, why the U.S. Giant is so much in demand for tank car loading and unloading. Stocks are available in all gasoline distributing centers.

• • •

Rubber jacketed U.S. Matchless Gasoline Hose is also used with utmost confidence where the going is tough . . . in airports, garages, and service stations.

UNITED STATES RUBBER PRODUCTS, INC.

1790 Broadway New York

United States Rubber Company

Orange State Oil Co., Cities Service distributor in Miami, operates this well designed, inviting station

was worth fooling with, has the bulk of the business. It also has worked up a big business in bunker oil.

More ocean ships are putting into Florida ports. Big liners are calling at Miami. A new seaport at Port Everglades, about 30 miles north of Miami, is being developed and the Standard Oil Co. has a large installation there. The ships are offering a nice market for bunker oil.

One Gallon Buyers Are A Real Gas Market

I have just seen the biggest string of one and two-gallon gasoline buyers in my life. It was down at a track side station of the Southern Oil Stores, Inc., headquarters Birmingham, Ala. Two agile attendants were kept busy waiting on this trade. A few customers came in good cars but most of them in old cars. The attendants said they got some high class car business, people from the other end of town who valued most highly the 2 cents a gallon they saved by buying there.

At least 75% of all the station's patronage is of the one and two-gallon class. In many cases the attendants believed a quarter was all the money the customers had with them, or maybe all they had in the world at the time. Saturday's sales are of good gallonage, even up to 10 and 15 gallons because the customers have just been paid off and want to get in their week's stock of gasoline before they spend the money for something else. I asked if a price for two or more gallons might not get larger sales but the boys did not think so, even though they wear out a pair of shoes in three months hustling over the loose stone drive.

There is no question but that an imposing number of people in this world these days, at least, are barely able to own the decrepit autos they do and it is nip and tuck with them to keep their cars going. To them the 2 cents a gallon they save is a real item. It is not the bargain in the price that attracts them but the actual saving. In talking with several oil men the other day about the attraction low price and even shabby stations seemed to have for some people this marketer said.

"We have a few stations that are shabby as can be yet they have their own clientele and without a cut price. The customers of that station simply would not feel at home in one of our classy places. If we abandoned the bum lookers they would hunt around until they found a similar one."

However the Southern Oil Stores station here is not shabby looking by any means. It is as smart a station as you will find anywhere, but simple of design, with small green and white building and no canopy over the pumps.

What probably accentuates the desire for the 2-cent saving here is that this city adds 1 cent to the 7 cents the state collects and the 1 cent the federal government pockets, making a total gasoline tax in the city of 9 cents a gallon with the posted service station price 23½ cents. If there was not any gas tax at all and the boys could get two gallons for a quarter, maybe they would not be so much interested in the two cents saving?

Anyway it just irks my soul to pay a 9-cent tax, much more of an irk than to pay a lesser tax. The oil companies here do not say anything about this extra cent. At least I did not know of it until I talked to this trackside station tonight. A few big tax signs might be more to the point than so many signs about oil and gasoline.

Runs a Chauffeurs Club and Gets Their Business

A gasoline retailer at Miami Beach—which is the big luxurious suburb of Miami—has landed most of the chauffeur business for many blocks around by fixing up a simple club room for the boys. Its not much as a room but it is a place to loaf and clean up. It has gotten to be so much of a hangout that owners, when they want their cars, phone to this "club" for their drivers. And the dealer gets nice business because these big chauffeur driven cars will take 10 to 20 gallons

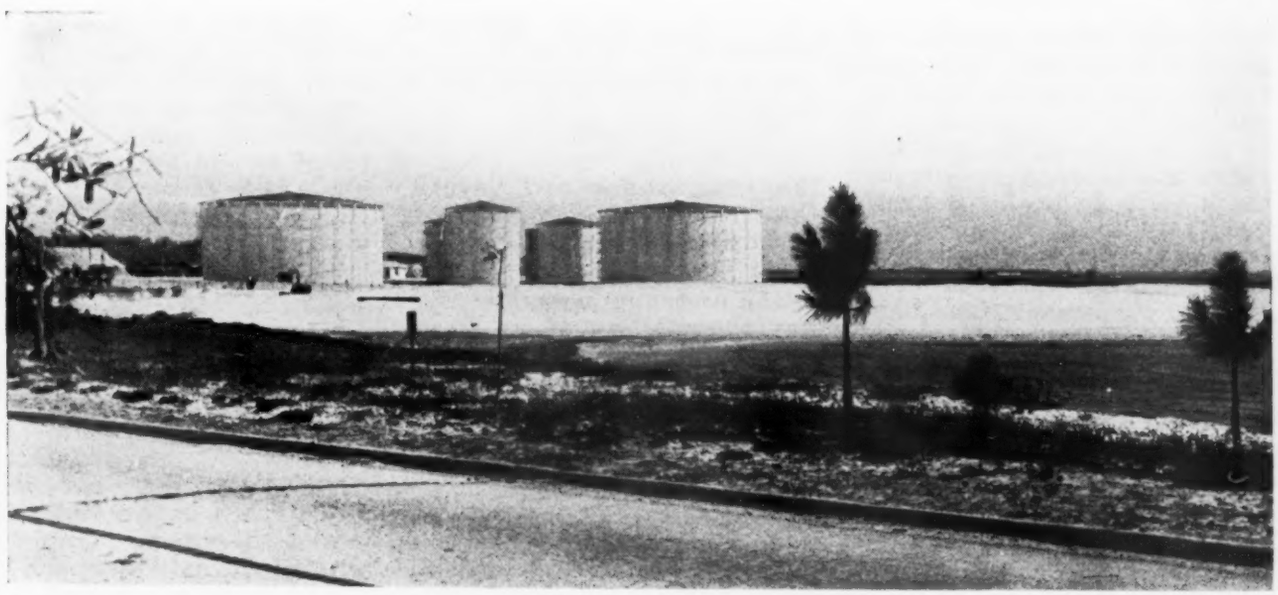
Down town Miami, along famous Biscayne Boulevard, gets quite a gala appearance from the row of snappy looking oil company stations that edge the boulevard on the ocean side and some places tend to shut off the none-too-sightly docks. Just the look of the main street tells you ta take it easy and enjoy the sunshine and the blue ocean

at a time, most of them holding 30 gallons.

Tell Your Retailer *Before* The Business Drops

Down at Miami the other day a district manager was complaining that my report that I had just observed a couple of empty rooms on my floor at the Miami Biltmore Hotel, indicated the beginning of the general exodus and that it would probably be some weeks before the retailers of gasoline got it into their heads that the dropping off in their gallonage was due to departure of their customers and not price cutting on the part of a competitor. So I suggested to the oil man that he might have a little graph drawn showing from the gasoline tax figures how the gallonage drops off each year, or he could use his own figures. This would prove that when business slacks off the middle of March the retailer should keep his shirt on and not eye his competitor around the corner with suspicion. When the winter tourists depart they fly in a hurry and half of them are gone before you realize that the crowd on the streets is thinner than usual. You may have thought there was a good dog race, or maybe the fishing was better before you knew the real reason.

Perhaps such advance warning to retailers, and even all marketing departments, in other parts of the country would be a good thing. Every marketing outlet has its seasons and most of the operators fail to keep good track of them. Even refiners seem to think that



These tanks are under construction by the Standard Oil Co. of Kentucky and constitute the company's new marine terminal at Panama City, Fla. A string of islands in the distance affords protection to the water. The tanks are just off the popular and newly finished shore road from Tallahassee to Pensacola. All these tanks, as are so many of the Standard's tanks in Florida, are being protected from the sun's rays by false sides, and tops

summer will keep on all through Fall and past Christmas the way they keep pushing their runs to stills sometimes.

Canopies Invite Customers To Loaf from the Hot Sun

Canopies over pumps and yard space where tires are changed are quite necessary down South where the sun gets pretty hot and the rains come up suddenly, even frequently and spill a lot of water. But the tendancy of some people to loaf under them and visit with the other customers is causing some of the oil companies to tinker with something different.

Oil men here do not believe that a canopy, by suggesting a shut in place, keeps people away as they do up north. The latter proposition the writer never could see, providing the canopy was properly built. Down here the canopy invites instead of repels, if it actually repels anywhere. However the way a station gets all cluttered up with customers who have bought their gasoline but don't move on, either on a hot day or a rainy one, has caused some companies to experiment with some pumps under a small canopy and the others out in the open with a place for the tire man to work way off by himself where the customers are less likely to go and visit.

The problem is much more acute down here than it could be anywhere else in the country because every one generally knows every one else and besides some of these people never do get in a hurry to get anywhere at all. If they never arrive it seems to be all right with them. But to ask them to move out into the sun and let another customer in offends them mortally and they never come back and they even take pains to see that their friends don't come.

It is a problem the answer to which the companies have not yet got.

Should Call It "Petrol" In Snooty Palm Beach

Palm Beach, where the ultra millionaires disport, often times with the trash of the earth, gives one the impression of trying to be so darn snooty that the oil companies should change the name of gasoline at their stations there to "petrol", as they call it abroad. High stone walls and big hedges surround the big estates, hiding them from the contaminating public view, with armed guards at the gates. If you want to know what goes on behind all this secrecy read February issue of *Fortune* Magazine and don't miss the line saying that about "the marital ties that part so casually in many cool bedrooms, night after night."

To call our plain American gas "petrol" would probably make a big hit, might even start a lot of new trade to the station advertising it. Some of the buyers probably would think we had imported it direct from Europe for their special benefit. Too many cocktail parties probably.

Shaw Bros. of Miami Mark 20th Anniversary

Martin L. and Henry O. Shaw, for 20 years Independent Oil jobbers of Miami, celebrated that event Feb. 29th. They ran full page ads in Miami papers, picturing the old horse-drawn tank wagon they used to drive with the modern tank truck of today. They have seen Miami grow from a collection of homes and business buildings into one of the most vivid gala cities of the country. Today Shaw Bros. distribute Pure Oil Co. products.

How Small Company Conducts Spring Oil Sales Campaign

HOW a small sales organization can put on a drive in the spring for lubricating oil sales to motorists with a 5-point program is illustrated by the campaign started April 1 by the Brewer Brothers Service Stations, La Grange, Illinois.

LA GRANGE, Illinois

The company operates four stations, three in La Grange and one in Hinsdale. Both cities are wealthy western suburbs of Chicago. A nationally advertised motor oil, on which the company began distribution last fall, is featured.

Favorable weather conditions caused Fred L. Brewer, head of the organization, to advance the opening date of the spring oil drive from April 15 to April 1.

The first step in the program was the mailing of an insert with the March statements. The second was to have match booklets bearing an advertisement of the oil distributed so restaurants and cigar stands began giving them out the first of the month. Thus, motorists were made doubly aware of the brand April 1, in finding advertising material with their monthly statements the same day the match covers bobbed up.

Two advertisements in local newspapers comprise the third step. These were scheduled for April 2 and 9, linking the company's advertising program with the national program of the refiner. Following these advertisements will come the fourth step, more advertising in the form of direct mail pieces to be issued April 16 and 23. Four advertisements will reach motorists after the opening features on April 1, at weekly intervals.

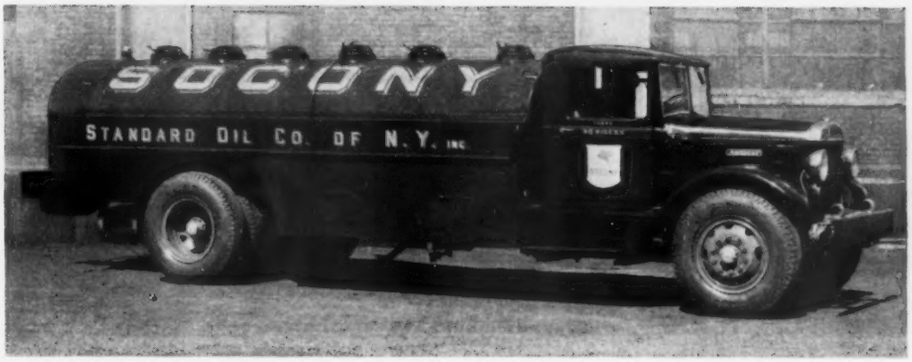
The fifth and final step in the campaign is a contest among station salesmen during the first half of the month. Four cash prizes are to be awarded. To place all stations on a par Mr. Brewer is basing the awards on the ratio of sales of this motor oil brand to gasoline sales.

Sales Tax Ruling

FLINT, Mich.—Buick Motor Co. announces that state sales taxes in their home state must be paid by retail car buyers who buy their cars from their local dealers but come to Flint for their cars. Where the buyer makes his purchase in Michigan he must pay the Michigan state tax no matter where he lives.

That makes it 100%!

This is Type U, one of four different types of S. & J. Hydraulic Internal Valves. This type screws into the tank flange and the pipe line connection screws into the valve. Furnished in bronze or aluminum and in sizes from 1½" to 6", all sizes and types are listed by the Underwriters' Laboratories.



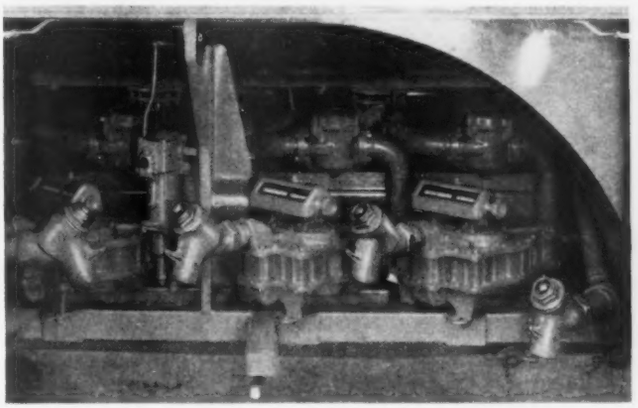
The Socony-Vacuum Oil Company, Inc., is another of the major marketers who use S. & J. Hydraulic Internal Valves in their truck tanks, assuring maximum safety in the congested areas in which this company operates.

Although the American Petroleum Institute and the National Fire Prevention Bureau recommend the use of Safety Internal Valves on truck tanks—and many state laws and municipal ordinances require their use—there are still a few petroleum marketers who doubt their efficacy.

Now the final authority on that subject has spoken. The Underwriters' Laboratories have tested, inspected and approved the S. & J. Hydraulic Internal Valve System for truck tanks. Underwriters approval satisfies the fire insurance companies who carry the risks. It is accepted by the fire prevention bureaus. It is respected by the courts. It means a lot to you.

When the Underwriters' Laboratories list any product—it's got to be right. They've run exhaustive tests to prove its worth. You can't afford to use a doubtful substitute when "approved" safety valves are available. S. & J. Hydraulic Internal Valves are the only listed valves on the market.

Write for a copy of our book "Transporting Inflammable Liquids With Safety". It illustrates the system that has been adopted by the majority of the large marketers. Write for your copy today.



The illustration above shows a typical Socony hookup. Note the S. & J. operator in the compartment at the left.

S&J

AUTHORIZED DISTRIBUTORS

Advance Auto Body Works, Los Angeles; Beall Pipe & Tank Co., Portland; Heil Co., Milwaukee; Farrell Mfg. Co., Joliet; Quaker City Iron Works, Philadelphia; Butler Mfg. Co., Kansas City and Minneapolis; Columbian Steel Tank Co., Kansas City; Standard Steel Works, No. Kansas City; Thomas Wright Co., Jersey City; Gar Wood Industries, Detroit; Pennsylvania Furnace & Iron Co., Warren, Pa.; Davis Welding & Mfg. Co., Cincinnati; Robinson Boiler Works, East Cambridge, Mass

SHAND & JURS COMPANY

Berkeley, California, U. S. A.

295 Madison Ave. New York

SHAND & JURS

Union Asks Power to Control Lease Cancellations

CLEVELAND, April 21

OIL companies in the Greater Cleveland area will be forbidden to cancel a service station lease to a union lessee without first contacting a union representative if the conditions in a new union contract are agreed upon by the oil companies. They also would be limited to union members in making leases.

This contract, in the form of a blanket agreement for all leased stations, together with a new union contract pertaining to salaried station operators and attendants, has been received by oil companies here with a letter which suggests that, in view of the many conventions and expositions to be held in Cleveland this summer, it would be mutually advantageous to commence negotiations immediately. The union has requested a reply to the letter on or before April 25. It is understood that a number of the oil companies have acknowledged the letter indicating they would meet with the union committee.

Gasoline Station Operators Union No. 18378, also proposes in its new leased station contract that the oil companies reduce the rental on such stations to a point where the lessee can make more money.

Following is the proposed contract covering the leasing of stations which the union has sent to oil companies in the Cleveland territory:

"(1) That rental charged in such stations will be minimized so as the lessee can make remuneration commensurate with his managerial abilities, his investment in stock, his hours of labor and be able to pay the operators in those stations the prevailing union wage.

"(2) The company will use its good offices and moral suasion to endeavor to eliminate the prohibitive hours that lessees are working, by urging the lessee to have sufficient help at the station. (This can be accomplished by an equitable arrangement).

"(3) Where inequities exist in leased outlets the company shall meet with the union representative to settle the matter amicably in conformity with the general policy mentioned above.

"(4) Before cancelling a lease on a union lessee the company must have a justifiable reason and contact the union representative on the matter.

"(5) The company agrees not to exercise any direction and control over the lessee.

"(6) In the event that the company exercises direction and control, the lessee and operators shall automatically be considered an employe and come under the union agreement covering salaried employes.

"(7) Testing of pumps by city sealers shall be considered as maintenance of equipment and said fee shall be paid by the supplying oil company.

"(8) All operators including lessees of company leased stations shall be members in good standing of Gasoline Station Operators Union No. 18378.

THE proposed agreement sent to the oil companies in regard to salaried service station employes at company owned stations includes an increase of approximately 10 per cent for all employes in each class of operation, and a vacation provision which entitles the employe with over six months and less than one year of service a week's vacation with pay, and with over one year of service two weeks with pay. Otherwise the new contract remains practically the same as last year.

The union's new wage proposals for salaried station employes are as follows: Managing operator, $123.75 per month. In addition he shall receive $5.00 per month for second full time operator working under him, and $2.00 per month for each additional full time operator.

Senior operators, $112.75 per month.

Junior operators, $90.75 per month for the first six months of their employment, and $99.00 per month thereafter.

Class "A" specialized operators, $140.25 per month.

Class "B" specialized operators, $112.75 per month during the first three months of their employment, and $129.25 per month thereafter.

Part time operators shall be paid at a minimum rate of 60 cents per hour.

Washers and porters shall each be paid at a minimum rate of 45 cents per hour.

Expiration of the present contract between oil companies and the union comes on May 16, 1936. The union has asked for an agreement on the new proposal on or before that date.

Charge West Virginia Tax Officials With Frauds

NEW YORK, April 18.—Three West Virginia tax officials have been charged with conspiracy to defraud the state of gasoline tax collections through manipulation of refunds, according to the American Petroleum Industries Committee.

After the alleged fraud was discovered, Boyd Ferrell, a tax department employee, committed suicide and State Budget Director Frank C. Horn and J. C. Little, former head of the gasoline tax division were removed from their posts and arrested, it was stated.

Gasoline tax investigations are also taking place in Kansas, Colorado and Mississippi. The police are reported to be still hunting for J. H. Campbell, who jumped his $5000 bail and disappeared following his arrest at Houston, Texas, in connection with the alleged Tennessee gasoline tax frauds.

Is Association Statistician

DALLAS, Texas — H. J. Struth, petroleum economist formerly located in Houston, is now statistician for the Mid-Continent Oil & Gas Association of Texas, with headquarters here.

ADVERTISING PAGE REMOVED

● The Public Educational Number of National Petroleum News has found its place among the most valued volumes on the bookshelves in oil men's homes. Its articles are interesting enough to stand rereading and the wealth of data in its 512 pages, will be referred to many times in an oil man's hours of planning at home and in his conversations.

• MARKETS •

CLEVELAND, April 20

CONFLICTING price trends featured oil markets in the week ended April 18. In the main, however, prices were pointing higher. Outstanding among the week's price movements were 0.5-cent advances in Pennsylvania and Mid-Continent bright stocks, and a 2-cent advance in retail gasoline prices throughout the Pacific Coast territory.

Early spring demand continued to depend pretty much on weather conditions. In areas where the weather was favorable to motoring and farm work, demand for gasoline and tractor fuel was brisk. The fact that buyers began ordering out supplies in fairly good volume at the first signs of spring indicated that distributors' inventories were low.

The Mid-Continent tank car gasoline market was stimulated by the most active demand so far this year. Shipments on contracts were responsible for most of the volume, although open market purchases were on the increase.

Prices generally were unchanged on gasoline originating in the Mid-Continent. Under the new revised octane brackets, prices for gasoline of 62 octane and below were at a minimum of 5 cents, Group 3. The 63-67 octane gasoline was quoted at a minimum of 5.75 cents, Group 3. Refiners were asking at least 6 cents for 68-70 octane, except in the Mid-Western market where 68-70 was sold at 5.75 cents.

The Mid-Western market also was about as active as it has been at any time this year. The weather was almost ideal for motoring, and gasoline sales jumped. Despite the increased sales, however, prices were unchanged. There was plenty of gasoline for sale but price shading was at a minimum.

A 0.5-cent advance in retail prices in metropolitan Chicago bolstered the Mid-Western wholesale market. Service station prices in the Chicago area now are within 1 cent of so-called normal. The advance led to speculation as to whether retail prices generally throughout the Standard of Indiana territory would be advanced. There are, however, about five areas in that territory in which prices are "depressed."

Wholesale markets along the eastern seaboard, mostly the northern portions, were unsettled. Gasoline inventories at coastal terminals have been increasing recently and have become burdensome in some quarters. Delay in getting stocks to terminals along the Erie canal and in filling storage in the areas hit by floods has resulted in easier prices at New York harbor and Boston.

With the exception of inquiries for two cargoes of Grade C bunker oil, the Gulf market was dull. Good grades of bunker oil were difficult to obtain, some buyers reported. This situation was emphasized by the fact that the Navy Department did not receive any bids for its bunker oil requirements during May, June and July.

Open market demand for both gasoline and light fuel oils was slack at the Gulf. Export suppliers still were unable to get any business as their prices remained above prices currently quoted by Roumanian refiners.

Supplies of natural gasoline were on the increase and Texas prices were reduced 0.25 cent in order to stimulate buying. Some manufacturers, however, continued to store their production.

Kerosine came into its own as soil conditions in a larger area were more favorable for plowing. Fields that were too wet dried out to some extent, while areas that had been too dry were helped by rains.

Kerosine prices in the Mid-Continent and Mid-Western markets generally were unchanged despite the increased demand. Offerings, however, still were rather scarce. Some buyers were using No. 1 fuel oil in preference to kerosine. Lower product prices plus lower freight charges on distillate were contributing factors.

Both Mid-Continent and Pennsylvania bright stock prices were advanced 0.5 cent by refiners. Most of the recent activity in bright stock has been limited to buying for export or by refiners in need of supplementing their own production. At the present time, however, domestic jobber demand is getting under way.

Neutral oil prices, both Mid-Continent and Pennsylvania, were steady. Pennsylvania neutrals have rallied and were pointing higher following the downward trend of last month.

Both wholesale and retail gasoline prices were advanced on the Pacific Coast last week, the second advance since the first of the month. Wax prices were steady in most areas despite the lull in buying that has developed the past two weeks. Few refiners had much wax to offer, so that attempts of buyers to purchase at under quoted levels were none too successful.

N. P.N. Gasoline Index

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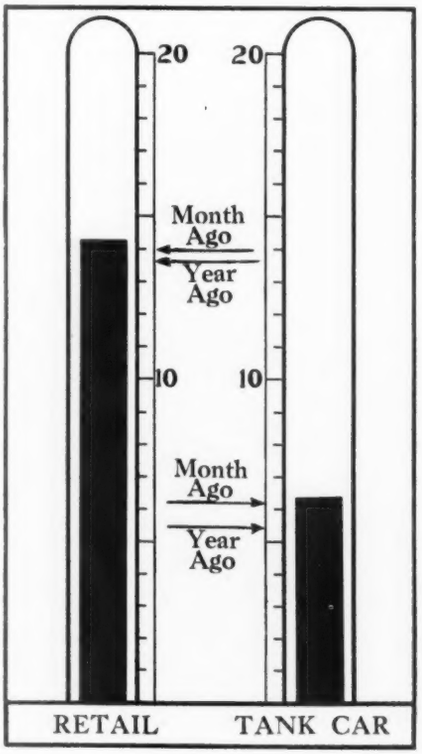

Retail index is an average of 50 cities, ex-tax, and tank car is a weighted average of 13 wholesale markets for regular-grade gasoline. The gasoline price index this week represents the following price in cents per gallon:

	Retail	Tank Car
April 20	14.26	6.53
Month ago	13.87	6.20
Year ago	13.65	5.80

Chicago

Demand Increases

CHICAGO, April 18

UNDER the stimulus of ideal motoring weather over the Easter holiday, and which carried over throughout the week, the Mid-Western tank car gasoline market experienced one of the most active periods since the start of 1936.

The general improvement in weather conditions over the middle west was reflected not only in increased contract takings, but also in more active inquiry and sales in the open market.

Despite the improvement in demand, sellers and buyers alike, reported that there was no scarcity of gasoline at prevailing prices. Although offerings throughout the week were free, there was little price shading. Only occasional cars of gasoline were reported shading established prices. A check revealed that the lower prices covered either extremely low octane gasoline or distress material, which made necessary lower quotations to obtain immediate sale.

On April 15 the Mid-Western gasoline market began basing gasoline quotations on the revised octane brackets recommended by the Western Petroleum Refiners Association, and which are being followed by the majority of refiners supplying the middle west.

Below 62 octane gasoline remained steady all week at a low of 5 cents. A wide range of prices prevailed the latter part of the week for gasoline with 63 to 67 octane rating. Material barely falling within this range was available April 15 at 5.25 cents from one refiner. Resellers also reported asking this price. Gasoline up to 67 octane brought as high as 5.75 cents.

Regular gasoline, or material having 68 to 70 octane number, was offered generally at 5.75 to 6.125 cents. Sales of full specification unleaded 68-70 octane were reported last week at 5.75 cents. Refiners, however, generally were asking 0.25 to 0.375 cent higher for leaded regular gasoline.

The 0.5-cent increase in retail prices of regular and premium gasolines in the metropolitan Chicago area April 15 created a better feeling among local marketers, and also again gave rise to reports of a general price advance.

Kerosine was slightly higher. While demand was gradually gaining momentum, takings as yet were only fair, sellers said. Higher prices were more largely the result of suppliers' disposition to hold kerosine against the advancing market.

Rising temperatures and sunshine were improving the condition of the ground throughout most sections of the middle west. Field work has started in certain sections. Virtually all sellers reported that with farm work progressing, and barring a decided change in the weather, the long-awaited active kerosine buying season would shortly come into its own.

Good grades of No. 1 fuel oil, for use in tractors and other kerosine uses, acted as a drag on the latter product. Resellers reported that the 0.25 to 0.375-cent difference in price, and the 0.25-cent lower freight rate were deciding factors in buyers using distillate in preference to kerosine where possible.

Wax

Market Dull

NEW YORK, April 18.—A dull market for crude scale wax was reported by most traders during the week ended April 18. Buying for prompt delivery appeared light and apparently neither buyers nor sellers were particularly anxious to do much for future delivery.

Prices for crude scale remained unchanged throughout the week, although indications were that the prices which have prevailed the past few weeks were being shaded in a few instances. However, 2.5 cents was the lowest at which any sizable quantity of 124-126 white scale was reported moved and occasional sales were reported at higher prices.

Refined wax continued unchanged.

NOTICE

Mid-Continent refiners, virtually without exception, have approved the revised octane brackets for U. S. Motor gasoline adopted April 7 by membership of the Western Petroleum Refiners Association. A survey of Mid-Continent refiners, and of virtually every refinery representative and resale agent in Chicago, revealed that the majority started doing business on the basis of the revised brackets April 15.

In line with the policy of PLATT'S OILGRAM and NATIONAL PETROLEUM NEWS of following and reflecting generally accepted changes in trade practice, the following revisions are being made in octane brackets for U. S. Motor gasoline in Mid-Continent and Mid-Western markets beginning with this issue of NATIONAL PETROLEUM NEWS:

U. S. Motor, 62 octane and below
U. S. Motor, 63 to 67 octane
U. S. Motor, 68 to 70 octane (regular)

Mid-Continent

Natural Gasoline Easier

TULSA, April 18

WEATHER conditions continued the dominating factor in the Mid-Continent tank car market.

The plowing zone was widening in the north, which resulted in increased shipments of products suitable for tractor fuel. In some sections of the northern agricultural belt, however, activity still was hindered by wet soil. Drought conditions were alleviated in some middlewestern sections as rain made possible the plowing and discing of fields heretofore too dry to work.

Prices of kerosine showed little change from the previous week. If anything, they were more firmly entrenched at present levels.

Several Mid-Continent refiners reported the best movement of motor fuel so far this year. Shipments predominantly were to contract outlets. Open market shipments increased materially over the past week, but still were not up to expectations, refiners reported.

General acceptance of revised octane brackets recommended by the Western Petroleum Refiners Association was indicated the past week when refiners almost without exception shaped their marketing policies to include the new lineup. Open market sales of U. S. Motor gasoline generally were made on the new basis.

Prices for the below 62 octane gasoline generally were 5 cents and up, Group 3. The 63 to 67 octane gasoline was selling at a low of 5.75 cents, Group 3. Sales in the 63 to 67 octane bracket comprised mostly the cracked gasoline of refiners not using lead. Gasoline with an octane rating of 68 to 70 was moving readily at 6 cents and up, on a Group 3 basis. Most refiners admitted it would be several days before reaction of jobbers to the new octane brackets could be obtained. Observers believed, however, the new lineup would meet with general acceptance among the jobbing trade.

A 0.5-cent advance in bright stocks featured the Mid-Continent lubricating oil market the past week. This advance was attributed to increased export and domestic demand.

During the winter months when domestic movement of bright stock was slow, export orders prevented stocks from accumulating. As a result bright stock manufacturers entered the spring blending season in good statistical position. Export shipments have continued heavy the past few weeks. Some suppliers indicated export orders had increased almost 10 per cent the past month.

Domestically the bright stock market was just beginning to hit its spring

stride. Blended oils were moving briskly to retail outlets. Oil to be blended at compounding plants also was receiving a good play.

Neutral oil was being shipped mostly to company-owned outlets, although open market sales have increased some. Little neutral oil was moving to the coast for export. Prices generally were unchanged.

Mid-Continent wax was in demand, with few suppliers able to take on additional orders. The 124-126 grade was closely held at a low of 2.75 cents, f.o.b. plant.

Prices of Texas Grade 26-70 natural gasoline dipped 0.25 cent late last week as increased offerings came to the foreground. For the past month or two open market shipments of natural to jobbers and refiners have not been brisk. In order to forestall an oversupply of natural in the open market, several Texas manufacturers have stored a portion of their production.

Continued lack of buying interest and the accumulation of too much natural at the Gulf caused the break in Texas prices. One manufacturer has been buying odd-car lots of Texas Grade 26-70, but apparently this buying was not sufficient to forestall the price decline.

Coastal

Bunker Oil More Active

NEW YORK, April 18

INCREASED activity in the bunker oil market was the outstanding feature of the Gulf cargo market the week ended April 18. Other commodities were not in demand.

Inquiries for at least two cargoes of Grade C bunker oil were being circulated among the trade as the week ended, but no actual sales were reported. Buyers generally said they were having difficulty in finding sources of supply for good grades of bunker oil. A number of companies who generally are sellers in this market were said to be uninterested in obtaining business at present.

As an indication of the tightness of the heavy oil market at the Gulf, suppliers pointed out that the Navy Department found no companies willing to bid for its bunker oil business for May, June and July. Bids were scheduled to be opened on April 14 but none was received. The department sought approximately 400,000 barrels in cargo lots over the three months.

Other commodities in the Gulf cargo market showed little change during the week. Inquiries were lacking in the open market, both for gasoline and light fuel oils, although contract gasoline shipments were increasing, it was reported.

Export buyers still were showing no interest in the American Gulf as a source of supply. Indications were that present prices might be shaded in one or two quarters for an export cargo for prompt loading. Most suppliers said they would not go below the schedule now prevailing, however.

California

Gasoline Higher

LOS ANGELES, April 17

ADVANCES in wholesale and retail prices of gasoline April 13, the second within the month, gave a firmer tone to practically all products on Pacific Coast petroleum markets the past week. Reports indicated that independent refiners, as well as both major and secondary companies, were generally maintaining the new established prices.

The advance on April 13 carried nominal tank wagon quotations on major company third grade and independent competitive brands to 12 cents a gallon, inclusive of 4 cents tax, for deliveries in the Los Angeles Basin area. Only three or four small plants in the Basin area were known to be selling below this figure and their output was not considered sufficiently large to create a serious threat to market stability.

A decrease was believed to have been made in the quantity of competitive gasoline entering this territory by truck and trailer from independent plants in the San Joaquin Valley, and marketing officials expected this supply of low-priced gasoline would be still further curtailed, or eliminated entirely, in the near future.

In northern California, as well as in Oregon and Washington, the marketing situation was more satisfactory than at any time in the past twelve months. Except for a few isolated spots, prices were maintained at a level consistent with transportation costs from the supplying refinery center.

Scarcity of natural gasoline, resulting in further advances in quotations, was largely responsible for the stability of the gasoline market. Field prices on this product ranged from 7 to 8 cents a gallon.

Fuel oil prices were irregular, but generally somewhat firmer than previously, chiefly because the output from independent plants was not sufficiently large to overload the market. Quotations ranged from 65 to 70 cents a barrel in the Basin area, with a slightly lower limit in the Valley.

Gas oil continued easy with evidence of oversupply in hands of independent refiners. Quotations were nominally $1.00 a barrel at independent plants, but some distress oil was available at a discount of 10 cents, or more, from that price.

Pacific Coast seaboard markets were without special feature. With the exception of an occasional spurt, spot business in kerosine and kerosine-distillate for the Orient has almost passed out of the hands of independent suppliers, and no indications were seen of an early resumption of this business. Competitive conditions were also regarded as unfavorable for any large spot shipments to other Pacific foreign territory.

Pennsylvania

Bright Stock Prices Higher

CLEVELAND, April 18

STEADY improvement in demand for bright stock and several grades of the higher flash cylinder stock brought higher prices for these oils in the Pennsylvania market the week ended April 18. Demand for other products also was good, and the general market trend was steady to higher.

As a result of the steady increase in demand and the reduction in crude runs, supply and demand for most products were about in balance.

Bright stock prices worked higher under the stimulus of active buying, mostly for export or by refiners in need of oil to supplement their own production. Although jobber buying has not gotten under way to any great extent, it was believed in some quarters that this type of buying would be stimulated by the advancing prices. Many observers believed that the status of bright stock was the best it has been for a year or more.

Three grades of cylinder stock, 600 steam refined, 650 steam refined, and 600 flash stock, also moved up on active buying. The 630 flash still was held back by the current prices of neutral oil.

Neutrals, however, were considerably improved, and some talk was heard about higher prices. The status of neutrals has been helped by the active demand for motor oils.

U. S. Motor gasoline showed little change, but the higher octanes, particularly 65 octane, were in good demand. Movement was satisfactory to most traders. Prices were steady. Inventories of most refiners were in good shape.

Kerosine prices remained steady. The kerosine season has been delayed by inclement weather. Refiners were taking advantage of the delay to fill their storage in anticipation of more active buying. Bradford-Warren district refiners' prices were still about 0.125 cent below prices prevailing in other districts. This condition was mostly the result of the competitive position of the Bradford-Warren marketing territory.

Demand for fuel oil was steady.

With steel operations on the increase in much of the territory supplied by western Pennsylvania refiners, supplies of fuel oil were absorbed without much difficulty.

While demand for wax was not as active, offerings were fairly well held.

Eastern

Gasoline Unsettled

NEW YORK, April 18

GASOLINE markets were unsettled along the northern portion of the eastern seaboard the past week, particularly at New York harbor and in the Boston district.

The increase in gasoline stocks at coastal terminals apparently was beginning to cause concern to some suppliers and this was reflected in the retail and wholesale price structures. Several refiners said that while their overall gasoline stocks position was fairly satisfactory, they were carrying too large a proportion of the total at their seaboard terminals. They attributed this to several causes, among them being the delay in opening of the New York state barge canal and slowness in filling storage in the areas which had been hit by floods.

Reports April 18 were that a portion of the canal would open early in the coming week and the remainder would be ready about April 27. Suppliers said that this should stimulate jobber buying and also would enable them to move gasoline to more of their inland plants.

No general changes were made in retail gasoline prices by the larger marketing companies at their company-owned or operated stations. Many dealer outlets of these same companies continued to post under the normal retail price in the metropolitan New York area. Service station prices at Boston were reduced 0.5 cent a gallon early in the week.

Tank car prices for kerosine were down 0.125 to 0.25 cent at New York harbor, but remained fairly steady at other eastern terminals.

Alcohol in Italian Motor Fuel

WASHINGTON—Italian motor vehicles of all kinds are gradually being adapted to conform with the Italian Government's regulation requiring 20 per cent alcohol in all motor fuel, U. S. Trade Commissioner M. P. Hooper at Rome reports to the Department of Commerce.

He adds that a small but gradual adaptation is also being made to permit the use of wood-charcoal produced fuel, but that since Italy has only small timber reserves, the use of the so-called "gasogene" engines must proceed slowly. They are now in use in some passenger busses.

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—Yet essentially the same product used by millions; tested, proved and found to markedly increase power and performance; reduce wear and noise; increase mileage and to provide unusual protection against many common damage dangers.

Pyroil keeps pace with improvements in automobile manufacture: the use of alloy metals in bearings and pistons; keeps abreast of improvements in lubricant refining processes. Not just a "graphite oil," although it contains an exact balanced quantity of truly colloidal graphite. Not a mere "break-in" oil: does not accelerate wear. *Its color is now a dark wine red.*

When you service this internationally famous product, you gain by securing new customers and increased business in other departments—built on Pyroil's good will and satisfaction-giving influence.

One service station writes:
"This week with PYROIL we have seen many new faces drive into the station."

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Genuine Pyroil Bears this Signature on Every Can.

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REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Prices are those to domestic jobbers who resell to consumers. They do not represent inter-refinery sales, or sales for export. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Gasoline *and* Naphtha

Oklahoma	April 20	April 13	April 6
48-54, 450 e.p. naphtha	4.875- 5.00	4.875- 5.00	4.875- 5.00
U. S. Motor gasoline, by octane numbers:			
62 octane and below..	5.00 - 5.25	5.00 - 5.125	5.00 - 5.125
*63-67 octane.....	5.75 - 6.00	6.00 - 6.125	6.00 - 6.125
*68-70 octane (regular)	6.00 - 6.25	.....	.....
60-62, 400 e.p. gasoline	5.00 - 5.25	5.00 - 5.125	5.00 - 5.125
64-66, 375 e.p. gasoline	5.125- 5.25	5.125- 5.25	5.125- 5.25
68-70, 350-360 e.p. gasoline.....	5.25 - 5.375	5.25 - 5.375	5.25 - 5.375
Western Penna. (Quotations and/or sales prices to car unloaders)			
Bradford-Warren:			
52-54 naphtha.....	5.50 - 5.625	5.50 - 5.625	5.50 - 5.625
Motor gasoline:			
U.S. Motor (58-62°)	5.625- 5.75	5.625- 5.75	5.625- 5.75
Minimum 60 octane	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125
Minimum 65 octane	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375
Minimum 70 octane	.....	.....	.....
64-66, 390 e.p. gasoline	5.875- 6.00	5.875- 6.00	5.875- 6.00
68-70, 350-360 e.p. gasoline.....	6.125- 6.25	6.125- 6.25	6.125- 6.25
Other districts:			
52-54 naphtha.....	5.50 - 5.625	5.50 - 5.625	5.50 - 5.625
54-56 naphtha.....	5.625- 5.75	5.625- 5.75	5.625- 5.75
Motor gasoline:			
U.S. Motor (58-62°)	5.625- 5.75	5.625- 5.75	5.625- 5.75
Minimum 60 octane	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125
Minimum 65 octane	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375
Minimum 70 octane	.....	.....	.....
64-66, 390 e.p. gasoline	5.875- 6.00	5.875- 6.00	5.875- 6.00
68-70, 350-360 e.p. gasoline.....	6.125- 6.25	6.125- 6.25	6.125- 6.25
California (3c tax to be added to prices if used in state)			
54-58 U.S. Motor, 437 e.p. for in-state shipment.....	7.50 - 8.00	5.75 - 6.50	6.00 - 7.00
54-58, U.S. Motor, 437 e.p. for outside state shipment.....	7.50 - 8.00	5.75 - 6.50	6.00 - 7.00
58-61, 375-400 e.p. gasoline, 65 octane and above.....	8.50 - 9.00	7.00 - 7.75	7.50 - 8.00
†***North Texas*** (F.o.b. Wichita Falls district for shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments).			
U. S. Motor gasoline, by octane numbers:			
62 octane and below..	5.00 - 5.125	5.00 - 5.125	5.00 - 5.125
*63-67 octane.....	5.75 - 6.00	6.00 - 6.125	6.00 - 6.125
*68-70 octane (regular)	6.00 - 6.125	.....	.....
60-62, 400 e.p. gasoline	5.125	5.125	5.125- 5.25
64-66, 375 e.p. gasoline	5.25	5.25	5.25
68-70, 350-360 e.p. gasoline.....	5.375	5.375	5.375
Kansas (F.o.b refinery, Kansas destination)			
U. S. Motor gasoline, by octane numbers:			
62 octane and below..	5.25 - 5.375	5.25 - 5.375	5.25 - 5.375
*63-67 octane.....	6.00 - 6.25	6.25 - 6.375	6.25 - 6.375
*68-70 octane (regular)	6.25 - 6.375	.....	.....
60-62, 400 e.p. gasoline	5.25 - 5.375	5.25 - 5.375	5.25 - 5.375
†***West Texas and New Mexico*** (F.o.b. W. Texas and N. Mex. refineries for unrestricted shipment)			
U. S. Motor gasoline, by octane numbers:			
62 octane and below..	5.00 - 5.125	5.125	5.125
*63-67 octane.....	5.75	6.125	6.125
*68-70 octane (regular)	6.00	.....	.....
†***East Texas*** (F. o. b. East Texas refinery for unrestricted shipment)			
U. S. Motor gasoline, by octane numbers:			
62 octane and below..	5.00	5.00	5.00
60-62, 400 e.p. gasoline	5.00	5.00	5.00
North Louisiana (For Louisiana and Arkansas destination)			
U. S. Motor gasoline:			
62 octane and below..	5.75	5.75	5.75
*63-67 octane.....	6.50	6.75	6.75
*68-70 octane (regular)	6.75	.....	.....
Arkansas (For Arkansas and Louisiana destination)			
U. S. Motor Gasoline;			
62 octane and below..	5.75	5.75	5.75
*63-67 octane.....	6.50	6.75	6.75
*68-70 octane (regular)	6.75	.....	.....
Ohio (Quotations of S. O. Ohio Delivered any point in Ohio).			
U. S. Motor gasoline..	8.75	8.75	8.75
Above 65 octane no.	9.00	9.00	9.00

†Refiners generally receive from 0.25c to 0.5c per gallon more for gasoline and kerosine for local or differential territory shipment.

*Octane numbers revised to this basis April 15 by Western Petroleum Refiners Ass'n. Formerly, the two higher classifications were 63-70 octane and 71 and above.

Natural Gasoline

(Prices shown f.o.b. Group 3 and Breckenridge represent majority of sales made on dates shown to blenders on the freight basis shown below, although shipments may originate in other manufacturing districts, such as East Texas, Panhandle, Southwest Texas or Kansas).

	April 20	April 13	April 6
F.o.b. Group 3			
Grade 26-70.....	3.00	3.00	3.00
F.o.b. Breckenridge			
Grade 26-70.....	2.75 - 3.00	3.00	3.00
California (F. o. b. plants in Los Angeles basin)			
75-85, 375-390 e.p. for blending.....	7.00 - 8.00	6.65 - 7.00	6.65 - 7.00

Kerosine

Western Penna. (Quotations and/or sales prices to car unloaders)			
Bradford-Warren:			
45 w.w. kerosine.....	5.25 - 5.375	5.25 - 5.375	5.25 - 5.375
46 w.w. kerosine.....	5.375- 5.50	5.375- 5.50	5.375- 5.50
47 w.w. kerosine.....	5.50 - 5.625	5.50 - 5.625	5.50 - 5.625
Other districts:			
45 w.w. kerosine.....	5.375- 5.50	5.375- 5.50	5.375- 5.50
46 w.w. kerosine.....	5.50 - 5.625	5.50 - 5.625	5.50 - 5.625
47 w.w. kerosine.....	5.625- 5.75	5.625- 5.75	5.625- 5.75
Oklahoma			
41-43 kerosine.....	4.375- 4.50	4.375- 4.50	4.25 - 4.50
42-44 w.w. kerosine...	4.50 - 4.625	4.50 - 4.625	4.375- 4.625
Kansas (F. o. b. refinery Kansas destination)			
41-43 w.w. kerosine...	4.50 - 4.625	4.50 - 4.625	4.375- 4.50
42-44 w.w. kerosine...	4.625- 4.75	4.625- 4.75	4.50 - 4.75
†***North Texas*** (F.o.b. Wichita Falls district or shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments).			
41-43 w.w. kerosine...	4.375- 4.50	4.25 - 4.50	4.25 - 4.50
East Texas (F.o.b. East Texas refinery for unrestricted shipment)			
41-43 w.w. kerosine...	*4.125- 4.25	*4.125- 4.25	*4.125- 4.25
*Nominal			
North Louisiana (For Louisiana and Arkansas destination)			
41-43 w.w. kerosine...	4.625	4.625	4.375
Arkansas (For Arkansas and Louisiana destination)			
41-43 w.w. kerosine...	4.75	4.75	4.75
California (F.o.b. California refineries)			
38-40 w.w. kerosine...	3.25 - 5.00	3.50 - 5.00	3.50 - 5.00

Gas *and* Fuel Oils

Western Penna. (Quotations and/or sales prices to car unloaders)			
Bradford-Warren:			
36-40 fuel oil.....	4.625- 4.75	4.625- 4.75	4.50 - 4.625
‡*Other districts*:			
36-40 fuel oil.....	4.75 - 4.875	4.75 - 4.875	4.75 - 4.875
‡Not including Pittsburgh.			
Oklahoma (F.o.b. Oklahoma refineries)			
No. 1 white fuel oil.	3.875- 4.00	3.875- 4.00	3.75 - 4.00
No. 1 straw fuel oil.	3.625- 3.75	3.50 - 3.625	3.375- 3.50
No. 2 straw fuel oil.	3.25	3.25 - 3.375	3.25
No. 2 dark fuel oil..	3.125- 3.25	3.125- 3.25	3.125- 3.25
U. G. I. gas oil....	2.50	2.375- 2.50	2.50 - 2.625

(*Continued on next page*)

REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Prices are those to domestic jobbers who resell to consumers. They do not represent inter-refinery sales, or sales for export. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

	April 20	April 13	April 6
Fuel oils: (Prices per barrel of 42 U. S. gallons)			
28-30, zero	3.125	3.125	3.125
28-30	$1.00 –$1.10	$1.00 –$1.10	$1.00 –$1.025
24-26	$0.80 –$0.85	$0.80 –$0.85	$0.80 –$0.85
18-22	$0.725–$0.775	$0.725–$0.775	$0.725–$0.775
14-16	$0.65 –$0.675	$0.65 –$0.675	$0.65 –$0.675
Kansas (F.o.b. refinery, Kansas destination)			
No. 1 prime white	4.00	4.00	3.875– 4.00
18-22 fuel oil (per bbl.)	$0.80 –$0.825	$0.80 –$0.825	$0.80 –$0.825
10-14 fuel oil (per bbl.)	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70
North Texas (F.o.b. Wichita Falls district for shipment to Texas and New Mexico; Group 3 prices quoted on northern shipments).			
No. 1 straw, fuel oil	3.50 – 3.625	3.50 – 3.625	3.375– 3.50
No. 1 white, fuel oil	3.75 – 3.875	3.75 – 3.875	3.75
U.G.I. gas oil	2.50	2.50	2.50 – 2.625
No. 2 fuel oil	3.25	3.25	3.25
24-26 fuel oil (per bbl.)	$0.70 –$0.725	$0.70 –$0.725	$0.70 –$0.725
18-22 fuel oil (per bbl.)	$0.675–$0.70	$0.675–$0.70	$0.675–$0.70
West Texas (F.o.b. West Texas refineries for unrestricted shipment).			
No. 2 fuel oil	*3.25	*3.25	*3.25
18-22 fuel oil (per bbl.)	$0.70 –$0.73	$0.70 –$0.73	$0.70 –$0.73
East Texas (F.o.b. East Texas refineries for unrestricted shipment).			
No. 1 white, fuel oil	*3.75 – 3.875	*3.75 – 3.875	*3.75 – 3.875
U.G.I. gas oil	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
No. 2 fuel oil	*3.00 – 3.125	*3.125– 3.25	*3.00 – 3.125
24-26 fuel oil	$0.675	$0.675	$0.65 –$0.675
20-24 fuel oil	$0.65 – 0.675	$0.65 – 0.675	$0.625–$0.65
North Louisiana (For Louisiana and Arkansas destination).			
No. 2 fuel oil	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
U.G.I. gas oil	2.875– 3.00	2.875– 3.00	2.875– 3.00
20-24 fuel oil (per bbl.)	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
16-20 fuel oil (per bbl.)	$0.95 –$1.00	$0.95 –$1.00	$0.95 –$1.00
10-14 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Arkansas (For Arkansas and Louisiana destination)			
No. 2 fuel oil	3.625– 3.75	3.625– 3.75	3.625– 3.75
28-30 fuel oil, zero	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
20-24 fuel oil (per bbl.)	$0.825–$0.875	$0.825–$0.875	$0.825–$0.875
16-20 fuel oil (per bbl.)	$0.725–$0.775	$0.725–$0.775	$0.725–$0.775
10-14 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
California			
San Joaquin Valley, per bbl.:			
Grade C fuel oil	$0.65 –$0.75	$0.65 –$0.75	$0.60 –$0.75
Diesel fuel oil	$0.95 –$1.47	$1.00 –$1.47	$1.00 –$1.47
Stove distillate	$1.25 –$1.89	$1.20 –$1.89	$1.20 –$1.89
Los Angeles, per bbl.:			
Grade C fuel oil	$0.65 –$0.95	$0.65 –$0.95	$0.65 –$0.95
Diesel fuel	$0.95 –$1.47	$1.00 –$1.47	$1.00 –$1.47
Stove distillate	$1.20 –$1.89	$1.20 –$1.89	$1.20 –$1.89
San Francisco, per bbl.:			
Grade C fuel oil	$1.00	$1.00	$1.00
Diesel fuel	$1.68	$1.68	$1.68
Stove distillate	$2.10	$2.10	$2.10

Neutral Oils

Western Penna. (Quotations and/or sales prices to car unloaders)

	Viscous Neutrals (*Viscosity at 70° F.*)		
200 Vis. (180 at 100°) No. 3 color, 420-425 flash:			
0 pour test	22.50 –23.00	22.50 –23.00	22.50 –23.00
10 pour test	21.50 –22.00	21.50 –22.00	21.50 –22.00
15 pour test	21.00 –21.50	21.00 –21.50	21.00 –21.50
25 pour test	20.00 –20.50	20.00 –20.50	20.00 –20.50
180 Vis. (165 at 100) No. color, 410-415 flash:			
25 pour test	19.00 –19.50	19.00 –19.50	19.00 –19.50
150 Vis. (143 at 100) No. 3 color, 400-405 flash:			
0 pour test	18.50 –19.00	18.50 –19.00	18.50 –19.00
10 pour test	17.50 –18.00	17.50 –18.00	17.50 –18.00
15 pour test	17.00 –17.50	17.00 –17.50	17.00 –17.50
25 pour test	16.00 –16.50	16.00 –16.50	16.00 –16.50

South Texas (F.o.b. South Texas refineries, for domestic shipment)

Vis. Color			
Pale Oils:	(*Viscosity at 100° F.; pour test 0*)		
100 No. 1½-2½	5.00	5.00	5.00
200 No. 2-3	7.00	7.00	7.00
300 No. 2-3	7.50	7.50	7.50
500 No. 2½-3½	8.50	8.50	8.50
750 No. 3-4	9.00	9.00	9.00
1200 No. 3-4	9.50	9.50	9.50
2000 No. 3-4	9.75 –10.00	9.75 –10.00	9.75 –10.00
Red Oils:			
200 No. 5-6	7.00	7.00	7.00
300 No. 5-6	7.50	7.50	7.50
500 No. 5-6	8.50	8.50	8.50
750 No. 5-6	9.00	9.00	9.00
1200 No. 5-6	9.50	9.50	9.50
2000 No. 5-6	9.75 –10.00	9.75 –10.00	9.75 –10.00

*Nominal.

Note: South Texas red oil prices shown above cover oils with green cast: blue cast red oils are slightly lower in some cases.

Mid-Continent (Viscosity at 100° F.; F. o. b. Tulsa basis. Prices represent quotations and sales)

	0 to 10 Pour Point:		
Pale Oils:			
Vis. Color			
60-85—No. 2	5.25	5.25	5.25
86-110—No. 2	5.75	5.75	5.75
150—No. 3	10.00	10.00	10.00
180—No. 3	11.25	11.25	11.25
200—No. 3	11.75	11.75	11.75
250—No. 3	13.75	13.75	13.75
280—No. 3	14.75	14.75	14.75
300—No. 3	15.25	15.25	15.25
Red Oils:			
180—No. 5	10.25	10.25	10.25
200—No. 5	10.75	10.75	10.75
250—No. 5	12.75	12.75	12.75
280—No. 5	13.75	13.75	13.75
300—No. 5	14.00	14.00	14.00

Note: Non-Viscous pale oils (60 to 110 Vis.) with a 15 to 25 pour point are quoted 0.5c under 0 to 10 pour test oils; pale and red viscous oils (150 to 300 Vis.) with 15 to 25 pour point are quoted 1c under 0 to 10 pour test oils. Viscous oils (150 to 300 Vis.) with a No. 4 color are quoted 0.5c above No. 5 color oils.

Chicago (F.o.b. Chicago District refineries) (Vis. at 100° F)

Pale Oils, *15 to 30 pour point:			
Vis. Color			
60-85—No. 2	6.50	6.50	6.50
86-110—No. 2	7.00	7.00	7.00
150—No. 3	10.00	10.00	10.00
180—No. 3	11.25	11.25	11.25
200—No. 3	11.75	11.75	11.75
250—No. 3	13.75	13.75	13.75
Red Oils, *15 to 30 Pour Point:			
180—No. 5	10.25	10.25	10.25
200—No. 5	10.75	10.75	10.75
250—No. 5	12.75	12.75	12.75
280—No. 5	13.25	13.25	13.25
300—No. 5	13.50	13.50	13.50

*60-110 vis. oils, with 0-10 pour point, bring 0.5c higher than above prices. Other oils with 0-10 pour point are quoted at 1c higher. To obtain prices delivered in Chicago, add 0.25c per gal.

California (F.o.b. California refineries; Viscosity at 100° F.)

All neutral oils, 11.5c per gal. in tank car lots; and 13.5c in iron bbls., to refiners only, excluding federal tax.

Cylinder Stocks

Mid-Continent (F.o.b Tulsa basis. Prices represent quotations and sales)

Bright Stocks:			
190-200 Vis. at 210° D	20.50	20.00	20.00
150-160 Vis. at 210°D:			
0 to 10 pour test	17.50	17.00	17.00
10 to 25 pour test	17.00	16.50	16.50
25 to 40 pour test	16.50	16.00	16.00
150-160 Vis. at 210° E	16.50	16.00	16.00
120 Vis. at 210° D:			
0 to 10 pour test	17.00	16.50	16.50
10 to 25 pour test	16.50	16.00	16.00
25 to 40 pour test	16.00	15.50	15.50
600 Stm. Rfd. Dark Green	5.75 – 6.50	5.50 – 6.50	5.50 – 6.50
600 Stm. Rfd. Olive Green	6.75 – 8.00	6.50 – 8.00	6.50 – 8.00
631 Steam Refined	*12.50	*12.00	*12.00
Black Oil	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375

*Only one refiner quoting.

Chicago (F.o.b. Chicago district refineries) (Viscosity at 210°)

Unfiltered Steam Refined:			
140	9.00	9.00	9.00
160	10.00	10.00	10.00
200	11.00	11.00	11.00
Bright stocks, 160 vis. at 210 No. 8 color:			
0 to 10 pour point	19.25	18.75	18.75
15 to 25 pour point	18.75	18.25	18.25
30 to 40 pour point	18.25	17.75	17.75
E filtered Cyl. Stock	14.50	14.00	14.00

To obtain prices delivered in Chicago, add 0.25c per gal.

Western Penna. (A.S.T.M. tests; quotations and/or sales prices to car unloaders)

600 stm. rfd. filterable	12.00 –12.50	11.50 –12.00	11.50 –12.00
650 steam refined	13.00 –13.50	12.50 –13.00	12.50 –13.00

(*Continued on next page*)

REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Prices are those to domestic jobbers who resell to consumers. They do not represent inter-refinery sales, or sales for export. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Cylinder Stocks (cont'd)

	April 20	April 13	April 6
600 flash	14.00 -14.50	13.50 -14.00	13.50 -14.00
630 flash	17.50 -18.00	17.50 -18.00	17.50 -18.00
600 Warren E	14.50 -15.00	13.50 -14.00	13.50 -14.00
Bright stock, 145-155, vis. at 210°, 540-550 flash, No. 8 color:			
10 pour test	22.50 -23.00	22.00 -22.50	22.00 -22.50
15 pour test	21.50 -22.00	21.00 -21.50	21.00 -21.50
20 pour test	20.50 -21.00	20.00 -20.50	20.00 -20.50
25 pour test	19.50 -20.00	19.00 -19.50	19.00 -19.50

Petrolatums

Western Penna. (Per pound, in barrels, carload lots, f.o.b. Penna. refinery. In tank cars, 0.5c per pound less. Quotations are from majority of petrolatum makers).

Snow White	6.625	6.625	6.625
Lily White	5.625	5.625	5.625
Cream White	4.625	4.625	4.625
Light Amber	2.75	2.75	2.75
Amber	2.50	2.50	2.50
Red	2.00 - 2.125	2.00 - 2.125	2.00 - 2.125

Wax

	April 20	April 13	April 6
Western Penna. (Per pound, f.o.b. New York)			
122-124 wh. crude scale, A.m.p.	2.55 - 2.60	2.55 - 2.60	2.55 - 2.60
124-126 wh. crude scale, A.m.p.	2.60 - 2.65	2.60 - 2.65	2.60 - 2.65

Oklahoma (Per pound in barrels; in a few instances, per pound in burlap bags; f.o.b. Oklahoma refineries)

124-126 wh. crude scale, A.m.p.	2.75	2.75	2.75

Chicago (F.o.b. Chicago district refineries, in cents per pound, in bags, carload lots. Melting points A.S.T.M. method; add 3° F. to convert into A.m.p.)

Fully refined:			
122-124	4.65 - 4.75	4.65 - 4.75	4.65 - 4.75
125-127	4.90 - 5.00	4.90 - 5.00	4.90 - 5.00
127-129	5.05 - 5.15	5.05 - 5.15	5.05 - 5.15
130-132	*5.45 - 5.55	*5.45 - 5.55	*5.45 - 5.55
132-134	*5.70 - 5.80	*5.70 - 5.80	*5.70 - 5.80
135-137	*6.45 - 6.55	*6.45 - 6.55	*6.45 - 6.55

*Same prices quoted in bags or slabs loose.

MID-WESTERN TANK CAR MARKETS

Following prices are in cents per gallon, except where otherwise noted, in tank car lots, representing majority of sales of products made by Chicago sellers, from legally produced crude to jobbers on Group 3 freight basis, although shipments may originate in other South-western or Mid-western refining districts. Prices do not include state or federal taxes.

Gasoline

U. S. Motor gasoline:	April 20	April 13	April 6
62 octane and below	5.00 - 5.125	5.00 - 5.125	5.00 - 5.125
*63-67 octane	5.375- 5.75	5.75 - 6.00	5.75 - 6.00
*68-70 octane (regular)	5.75 - 6.125	.....	.....
60-62, 400 e.p.	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
64-66, 375 e.p.	5.125- 5.25	5.125- 5.25	5.125- 5.25
68-70, 350-360 e.p.	5.25 - 5.375	5.25 - 5.375	5.25 - 5.375

Kerosine

41-43 w.w.	4.375- 4.50	4.25 - 4.375	4.25 - 4.375
42-44 w.w.	4.50 - 4.625	4.375- 4.50	4.375- 4.50

Fuel *and* Gas Oils

Domestic:			
No. 1 prime white	3.875- 4.125	3.75 - 3.875	3.75 - 3.875
No. 1 straw	3.50 - 3.625	3.375- 3.50	3.375- 3.50

*Octane numbers revised to this basis April 15 by Western Petroleum Refiners Ass'n. Formerly, the two higher classifications were 63-70 octane and 71 and above.

	April 20	April 13	April 6
No. 2 straw	3.125- 3.25	3.125- 3.25	3.125- 3.25
No. 2 dark	3.00 - 3.25	3.00 - 3.25	3.00 - 3.25
No. 3	2.875- 3.125	2.875- 3.125	2.875- 3.125
No. 4 (per bbl.)	$0.975-$1.05	$0.975-$1.05	$0.975-$1.05
No. 5 (per bbl.)	$0.70 -$0.75	$0.70 -$0.75	$0.70 -$0.75
Industrial:			
No. 4 (per bbl.)	$0.875-$0.90	$0.875-$0.90	$0.875-$0.90
No. 5, (per bbl.)	$0.625-$0.675	$0.625-$0.675	$0.625-$0.675
No. 6, (per bbl.)	$0.55 -$0.60	$0.55 -$0.60	$0.55 -$0.60
U G.I. gas oil	2.375- 2.50	2.375- 2.50	2.375- 2.50

Naphtha *and* Solvent

Stoddard solvent	6.875	6.875	6.875
V. M. & P. naphtha	7.375	7.375	7.375
Cleaners' naphtha	7.375	7.375	7.375
Mineral spirits	6.375	6.375	6.375
Rubber solvent	7.375	7.375	7.375
Lacquer diluent	8.375	8.375	8.375

DAILY GASOLINE PRICES

Daily range of gasoline prices (cents per gallon) in tank cars, as reported in PLATT'S OILGRAM, (Week Ended April 17, 1936).

	April 13	April 14	April 15	April 16	April 17
U. S. Motor, 62 octane and below:					
East Texas	5.00	5.00	5.00	5.00	5.00
*North Texas	5.00 - 5.125	5.00 - 5.125	5.00	5.00	5.00
West Texas	5.125	5.125	5.00	5.00 - 5.125	5.00 - 5.125
Oklahoma	5.00 - 5.125	5.00 - 5.125	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
Mid-Western (Group 3 basis)	5.00 - 5.125	5.00 - 5.125	5.00 - 5.125	5.00 - 5.125	5.00 - 5.125
U. S. Motor, †63-67 octane:					
*North Texas	6.00 - 6.125	6.00 - 6.125	5.75 - 6.00	5.75 - 6.00	5.75 - 6.00
West Texas	6.125	6.125	5.75	5.75	5.75
Oklahoma	6.00 - 6.125	6.00 - 6.125	5.75 - 6.00	5.75 - 6.00	5.75 - 6.00
Mid-Western (Group 3 basis)	5.75 - 6.00	5.75 - 6.00	5.25 - 5.75	5.375- 5.75	5.375- 5.75
U. S. Motor, 68-70 octane (regular)					
*North Texas	....	....	6.00 - 6.125	6.00 - 6.125	6.00 - 6.125
West Texas	....	....	6.00	6.00	6.00
Oklahoma	....	....	6.00 - 6.25	6.00 - 6.25	6.00 - 6.25
Mid-Western (Group 3 basis)	....	....	5.75 - 6.125	5.75 - 6.125	5.75 - 6.125
Motor Gasoline, 60-64 octane					
New York harbor	6.75 - 7.00	6.75 - 7.00	6.75 - 7.00	6.75	6.75
Philadelphia district	6.75	6.75	6.75	6.75	6.75
Baltimore district	6.75	6.75	6.75	6.75	6.75
Motor Gasoline, 65 octane & above					
New York harbor	7.00 - 7.25	7.00 - 7.25	7.00 - 7.25	7.00	7.00
Philadelphia district	7.00	7.00	7.00	7.00	7.00
Baltimore district	7.00	7.00	7.00	7.00	7.00
U. S. Motor Gasoline, 58-62°					
Bradford-Warren (Western Penna.)	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75
Other districts (Western Penna.)	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75
Motor Gasoline, Minimum 60 octane					
Bradford-Warren (Western Penna.)	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125
Other districts (Western Penna.)	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125
Motor Gasoline, Minimum 65 octane					
Bradford-Warren (Western Penna.)	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375
Other districts (Western Penna.)	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375

*For shipment to Texas and New Mexico destinations; Group 3 prices are quoted on northern shipments.
†Changed to 63-67 octane, April 15; formerly was 63-70 octane.

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect April 20, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. New Jersey

Essolene

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Atlantic City, N. J.	7.8	10.3	4	17.8	9
Newark, N. J.	7.8	10.3	4	17.8	7.5
Annapolis, Md.	8.1	10.6	5	19.1	10
Baltimore, Md.	7.5	10	5	18.5	8
Cumberland, Md.	9.1	11.6	5	20.1	12.7
Washington, D. C.	7.5	10	3	16.5	9
Danville, Va.	9	11.5	6	21	12.9
Norfolk, Va.	7.5	10	6	19.5	11.3
Petersburg, Va.	8	10.5	6	20	11.7
Richmond, Va.	8	10.5	6	20	11.7
Roanoke, Va.	9	11.5	6	21	12.9
Charleston, W. Va.	8.3	10.8	5	19.3	12.6
Parkersburg, W. Va.	7.6	10.1	5	18.6	11.2
Wheeling, W. Va.	8.6	11	5	19.5	12.2
Charlotte, N. C.	9.2	11.7	7	22.2	12.9
Hickory, N. C.	9.5	12	7	22.5	13.1
Mt. Airy, N. C.	9.5	12	7	22.5	13.2
Raleigh, N. C.	8.9	11.4	7	21.9	12.7
Salisbury, N. C.	9.3	11.8	7	22.3	13
Charleston, S. C.	7.5	10	7	20.5	11.3
Columbia, S. C.	8.8	11.3	7	21.8	12.6
Spartanburg, S. C.	9.2	11.7	7	22.2	12.9

Price basis to undivided dealers: Dealer t.w. price less 0.5c per gal.

Price basis to commercial consumers: Beginning Feb. 11, 1935, all new commercial consumers will be signed on following differentials over tank car price, on yearly purchases: up to 35,999 gals., 2.5c over t.c.; 36,000 to 119,999 gals., 2c; 120,000 to 239,999 gals., 1.5c; 240,000 to 479,999 gals., 1c; and over 480,000 gals., 0.5c.

Above prices apply only when deliveries are made in lots of 50 or 100 gals. at one time, depending on code region in which deliveries are effected.

If deliveries are made in less than these minimum quantities, s.s. price at time and place of delivery applies.

Non-contract customers will be billed at 2.5c over tank car price at time and place of delivery.

Kerosine Discount: 1c off t.w. price for 25 gals. or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

Socony Mobilgas

	"Split" Dealer T.W.	Taxes	Total "Split" Dealer T.W.	S.S.	Kerosine T.W.
Metropolitan N. Y. City:					
Boroughs of Manhattan and Bronx	9.7	*5	14.7	19.2	7.25
Borough of Richmond (Staten Is.)	9.7	*5	14.7	19.2	7.25
Borough of Brooklyn (Kings and Queens)	9.7	*5	14.7	19.2	7.25
Albany, N. Y.	9	5	14	17.5	7.75
Binghamton, N. Y.	10.5	5	15.5	19	9
Buffalo, N. Y.	9.5	5	14.5	18	8.25
Jamestown, N. Y.	10	5	15	18.5	8.25
Plattsburg, N. Y.	9.5	5	14.5	17.5	8.75
Rochester, N. Y.	9.5	5	14.5	18	8.25
Syracuse, N. Y.	9.5	5	14.5	18	8.75
Danbury, Conn.	10.5	4	14.5	18	8
Hartford, Conn.	10.5	4	14.5	18	7
New Haven, Conn.	9	4	13	16.5	7.5
Bangor, Me.	10	5	15	18.5	8
Portland, Me.	9.5	5	14.5	18	7.75
Boston, Mass.	8.5	4	12.5	16	7.5
Concord, N. H.	10.5	5	15.5	19	8.5
Lancaster, N. H.	11.5	5	16.5	20	9.5
Manchester, N. H.	10	5	15	18.5	8
Providence, R. I.	9	3	12	15.5	7.25
Burlington, Vt.	12	5	17	20.5	8.75
Rutland, Vt.	9.5	5	14.5	17	8.5

*Plus 2% city sales tax computed at time of each sale.

Discounts to dealers: thru territory, off normal s.s. price, 4c to undivided dealers, and 3.5c to "split" dealers; except Metropolitan N. Y. City, undivided dealers get 5c and divided dealers get 4.5c, effective March 2.

To commercial consumers: Effective Feb. 4, 1935, covering yearly purchases, billed at posted tank car price, plus these differentials: 2.5c for delivery of 1,200 to 36,000 gals.; plus 2c, for 36,000 to 120,000 gals.; plus 1.5c for 120,000 to 240,000 gals.; plus 1c for 240,000 to 480,000 gals.; plus 0.5c for 480,000 gals. and over. Those buying less than 1,200 gals. yearly, get retail s.s. price.

Atlantic Refining

Atlantic White Flash Plus Gasoline

	Total T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Philadelphia, Pa.	12	5	17	17	9.5
Pittsburgh, Pa.	12.5	5	17.5	18.5	10
Allentown, Pa.	12	5	17	17	9.5
Erie, Pa.	11.5	5	16.5	18.5	9
Scranton, Pa.	11.75	5	16.75	16	10
Altoona, Pa.	12.5	5	17.5	19.5	9.5
Dover, Del.	12	5	17	17	10
Wilmington, Del.	11.5	5	16.5	16.5	9.5
Boston, Mass.	9	4	13	16.5	7.5
Springfield, Mass.	10	4	14	17.5	7.5
Worcester, Mass.	9.5	4	13.5	17	7.75
Fall River, Mass.	9	4	13	16.5	7.25
Providence, R. I.	9	3	12	15.5	7.25
Hartford, Conn.	10.5	4	14.5	18	7
New Haven, Conn.	9	4	13	16.5	7.5
Atlantic City, N. J.	10.3	4	14.3	17.8	9
Camden, N. J.	8.8	4	12.8	14.8	8
Trenton, N. J.	10.3	4	14.3	17.8	8
Annapolis, Md.	10.6	5	15.6	19.1	9.5
Baltimore, Md.	10	5	15	18.5	7.5
Hagerstown, Md.	11.1	5	16.1	19.6	10
Richmond, Va.	10.5	6	16.5	20	11.7
Wilmington, N. C.	10.1	7	17.1	20.6	11.4
Brunswick, Ga.	12	7	19	21	*13
Jacksonville, Fla.	10	8	18	20	10

Dealer discounts: on Atlantic White Flash Plus gasoline, thru territory, divided dealers, price equal to 3.5c off posted s.s. price; undivided dealers, price equal to 4c off posted s.s. price; authorized dealers contracts previous to Aug. 19, 1933, price equal to 3c less than posted s.s. price, plus 1c rental

Price basis to commercial consumer: Effective Oct. 1, 1935, on yearly gasoline purchases based on posted tank car prices plus following amounts: 1,200 to 36,000 gals., 2.5c over t.c.; 36,000 to 120,000 gals., 2c; 120,000 to 240,000 gals., 1.5c; 240,000 to 480,000 gals., 1c; 480,000 gals. and over, 0.5c.

S. O. Ohio

Sohio X-70 Gasoline

Ohio statewide	12.5	5	17.5	19.5	*13.5
Counties below statewide gasoline schedule:					
Hocking and Jackson	12	5	17	18.5	....
Paulding	11	5	16	17	....
Franklin	11.5	5	16.5	17.5	....

Renown (Third Grade Gasoline)

Ohio statewide	12	5	17	18	....
Counties below statewide gasoline schedule:					
Paulding	9	5	14	15	....
Franklin	11	5	16	16	....

Counties above statewide schedule:
Champaign, Clarke, Darke, Fairfield, Greene, Hamilton, Miami, Montgomery, Preble and Hocking and Summit 12.5 5 17.5 19.5 ....
Jackson 12 5 17 18.5 ....

Statewide Prices to Resellers & Agents

(These prices are on sliding scale based on actual spread between S. O. Ohio statewide tank car price and posted local s.s. price).

Including taxes	†Undivided Accounts	Divided Accounts	**Authorized Agents
Sohio X-70	16	16.5	16.5
Renown (3rd grade)	15.5	16	16

Note: On single deliveries of motor gasolines under 25 gallons, to t.w. consumers, s.s. price applies.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices," S. O. Ohio says.

*Kerosine prices include 1c state tax. Kerosine t.w. price, in Gallia county is 13c; Allen, Auglaize, Champaign, Darke, Hardin, Henry, Mercer, Portage, Preble, Putnam, Shelby, Summit, Trumbull, Union, Van Wert, and Wyandot counties is 12.5c; Defiance and Paulding counties is 12c.

†Excluding authorized agents.

**Excluding 0.5c rental.

Discounts to contract tank wagon consumers only: on all motor gasolines thru Ohio, except Hamilton County, effective Dec. 1, 1934, off posted t.w. price, on deliveries per month: 1,000 to 9,999 gals., 1.5c per gal. 10,000 gals. and over, 2.5c. Under 1,000 gals., full t.w. price. Single deliveries of less than 25 gals., full s.s. price. Additional yearly discounts (less amount paid or credited to buyer on monthly purchases), off t.w. price: 12,000 to 119,999 gals., 1.5c, 120,000 gals. or over, 2.5c. In Hamilton county: less than 100 gal. deliveries, full s.s. price; 100 to 3,000 gals., 1.5c off t.w.; 3,000 to 10,000 gals. 2.5c; and over 10,000 gals., 3c off t.w.

Discounts on kerosine: to dealers and commercial consumers, 3c per gal. off t.w. price, any quantity.

S. O. Kentucky

Crown Gasoline

	Total T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Lexington, Ky.	13	6	19	21	11
Louisville, Ky.	13	6	19	21	10
Paducah, Ky.	12	6	18	19	8.5
Covington, Ky.	12.5	6	18.5	20.5	10.5
Jackson, Miss.	13	7	20	22	*13
Vicksburg, Miss.	12.5	7	19.5	21.5	*13
Birmingham, Ala.	13	*8	21	23	12
Mobile, Ala.	13	*8	21	23	10
Montgomery, Ala.	13	*9	22	24	*14.5
Macon, Ga.	13	7	20	22	*14.5
Atlanta, Ga.	13.5	7	20.5	22.5	*13.5
Augusta, Ga.	13	7	20	22	*13
Savannah, Ga.	11.5	7	18.5	20.5	*13
Jacksonville, Fla.	10	8	18	20	12
Miami, Fla.	11.5	8	19.5	21.5	13.5
Tampa, Fla.	10	8	18	20	12.5
Pensacola, Fla.	12.5	*9	21.5	23.5	12

Kyso (Third Grade)

Lexington, Ky.	11.5	6	17.5	19	....
Louisville, Ky.	11	6	17	18	....
Paducah, Ky.	10.5	6	16.5	17	....
Covington, Ky.	11	6	17	18.5	....
Jackson, Miss.	11	7	18	19	....
Vicksburg, Miss.	10.5	7	17.5	18.5	....
Birmingham, Ala.	11	*8	19	20	....
Mobile, Ala.	11	*8	19	20	....
Montgomery, Ala.	10.5	*9	19.5	20	....
Atlanta, Ga.	10.5	7	17.5	18	....
Augusta, Ga.	10	7	17	17.5	....
Macon, Ga.	10	7	17	17.5	....
Pensacola, Fla.	11	*9	20	21.5	....

Dealer Discount: off posted s.s. price, on Crown and Crown Ethyl gasolines to "undivided" dealers 4c; on Kyso, 3c. To "divided" dealers: Crown and Ethyl, 3.5c, and Kyso, 2.5c, all effective on or about Jan. 1, 1934.

Discounts to tank wagon consumers: all single deliveries of 50 gals. or less, get posted s.s. price: all single deliveries of 50 gals. or more, to be billed at posted t.w. price, plus following discounts, off posted t.w. price: Ethyl and Crown gasoline, 50 to 2,999 gals. monthly, 1.5c; Kyso, 1c; 3,000 to 24,999 gals., Ethyl and Crown, 2c; Kyso, 1.5c; 25,000 gals. or more, Ethyl and Crown, 3c; and Kyso, 2.5c.

Taxes: in the tax column is included these city and county gasoline taxes at the following points: Birmingham, 1c city; Mobile, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Mississippi kerosine prices include 1c state tax Montgomery kerosine price includes 1c city tax.

S. O. Indiana

Standard Red Crown Gasoline

Chicago, Ill.	11	4	15	17	10.1
Decatur, Ill.	12	4	16	18	10.1
Joliet, Ill.	12	4	16	16.5	10.1
Peoria, Ill.	12	4	16	18	10.1
Quincy, Ill.	11.8	4	15.8	17.8	9.9
Indianapolis, Ind.	12.9	*5	17.9	19.9	‡14.6
Evansville, Ind.	12.7	*5	17.7	19.7	‡14.6
South Bend, Ind.	13.1	*5	18.1	20.1	‡15
Detroit, Mich.	10	4	14	16	8.3
Grand Rapids, Mich.	12.4	4	16.4	18.4	8.3
Saginaw, Mich.	12.6	4	16.6	18.6	9.6
Green Bay, Wisc.	12.7	5	17.7	19.7	10.8
Milwaukee, Wisc.	10.8	5	15.8	17.3	10.4
La Crosse, Wisc.	12.4	5	17.4	19.4	10.5
Minneapolis, Minn.	12.4	4	16.4	18.4	10.5
Duluth, Minn.	12.8	4	16.8	18.8	10.9

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal. in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls.; Kansas, 1/50c (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. in lots of more than 50 bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fee only: Iowa, 2/25c; Michigan, 4/5c per gal. for first 2 bbls.; 3/5c for next 3; 2/5c for next 5; 3/10c for next 15, and 1/5c per gal. in lots over 25 bbls.

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect April 20, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. Indiana (Cont'd)

Standard Red Crown Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Mankato, Minn.	12.4	4	16 4	18 4	10.5
Des Moines, Iowa	11.8	4	15.8**	18.8	9.9
Sioux City, Iowa	12	4	16 **	18	10.1
Davenport, Iowa	12	4	16 **	18	10.1
Mason City, Iowa	12.2	4	16.2**	18.2	10.3
St. Louis, Mo.	11.7	†4	15.7	17.7	9.8
Kansas City, Mo.	11.4	†4	15.4	17.4	9.5
St. Joseph, Mo.	11.4	†4	15.4	17.4	9.5
Fargo, N. D.	13.4	4	17.4	19.4	11.5
Minot, N. Dak.	14.6	4	18.6	20.6	12.7
Huron, S. Dak.	12.9	*5	17.9	19.9	11
Wichita, Kans.	10.9	4	14.9	16.9	7.1

Note: Kerosine s.s. prices are generally 3c above normal t.w. price.

Stanolind Gasoline (Third Grade)

Stanolind normal prices are 1c under normal Red Crown prices, thru territory. Among subnormal points are the following:

Decatur, Ill.	11	4	15	16.5	....
Evansville, Ind.	11.7	*5	16 7	18.2	....
Indianapolis, Ind.	11.9	*5	16 9	18.4	....
Des Moines, Iowa	9.1	4	13 1**	17.8	....
St. Louis, Mo.	10.7	†4	14.7	14.7	....
Detroit, Mich.	8.5	4	12.5	14.5	....
Milwaukee, Wis.	9.8	5	14.8	16.3	....
Huron, S. D.	11.9	*5	16.9	18.9	....
Wichita, Kans.	8	4	12	14.4	....
Minneapolis, Minn.	11.4	4	15.4	15.4	....

†St. Louis, Kansas City and St. Joseph prices include 1c city tax. ‡Includes 4c state tax.

*South Dakota gasoline and kerosine prices include 0.1c for sales tax Indiana t.w. and s.s. gasoline prices include 0.2c for chain store tax.

**Service station prices for gasoline at Iowa points represent the opinion of National Petroleum News as to prices prevailing at the majority of stations.

Discounts to dealers: Effective Dec. 1, 1934, thru territory, except Michigan effective Apr 1, 1935, and except Chicago division and Iowa, maximum discounts to controlled and uncontrolled undivided gasoline accounts, off s.s. price at normal points: Ethyl and Red Crown gasoline, 3.5c; Stanolind 2.5c; in Chicago, effective July 1, 1935, Ethyl and Red Crown, 4c; Stanolind, 3c. Divided gasoline accounts thru territory, get 0.5c less per gallon. In case of lease and agency and AAA accounts, the above discounts include the 0.5c per gal. rental allowance. In Iowa, normal dealer prices are 1.5c below normal t.w. price for first and second grade gasolines, and 0.5c under normal t.w. for third grade.

Discounts to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. price; all gasolines, 25 to 1,000 gals., at t.w. price; 1,000 gals or more, 1.5c off t.w. on Ethyl and Red Crown, and 0.5c on Stanolind. Purchases of less than 25 gals. get regular s.s. price.

S. O. Nebraska

Standard Red Crown Gasoline

Omaha, Neb.	12.4	6	18.4	20.4	10.4
McCook, Neb.	13.1	6	19.1	21.1	11.1
Norfolk, Neb.	12.8	6	18.8	20.8	10.8
North Platte, Neb.	13.2	6	19.2	21.2	11.2
Scottsbluff, Neb.	13.9	6	19.9	21.9	11.9

Reliance Gasoline (Third Grade)

Omaha, Neb.	11	6	17	17	....
McCook, Neb.	11.6	6	17.6	17.9	....
Norfolk, Neb.	11.8	6	17.8	19.8	....
North Platte, Neb.	12.2	6	18.2	20.2	....
Scottsbluff, Neb.	8.9	6	14.9	14.9	....

Discount to dealers: where service station gasoline prices are normal, resellers' allowance off service station prices are (*Maximum* over-all, including rent) as follows: Reliance, 2½c; Standard Red Crown, and Solite with Ethyl, 3½c. Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (*Minimum* over-all including rent): Reliance, 2c, Standard Red Crown and Solite with Ethyl, 3c.

Discounts to consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

Essolene

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Little Rock, Ark.	8	10.5	7.5	21 5	11.5
Alexandria, La.	8	10.5	*8	22	*11
Baton Rouge, La.	8	10.5	*7	21	*11.5

S. O. Louisiana—Cont'd

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
New Orleans, La.	7.25	9.5	*9	22	*12
Lake Charles, La.	8.5	11	*8	22.5	11
Shreveport, La.	7.5	10	*7	20.5	11
Lafayette, La.	8.5	11	*8	22.5	12.5
Bristol, Tenn.	9.5	10.75	8	21.5	14.5
Chattanooga, Tenn.	10	12.5	8	24	11.5
Knoxville, Tenn.	10.5	13	8	24.5	14
Memphis, Tenn.	8.5	11	8	22.5	11
Nashville, Tenn.	9.5	12	8	23.5	10

*Baton Rouge and Shreveport gasoline tax includes 5c state tax, 1c federal tax, and 1c parish tax. Alexander, Lake Charles and Lafayette, 2c parish tax. New Orleans, 3c parish tax. Louisiana kerosine prices include 1c state tax.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective Feb. 11, 1935, commercial consumers not under contract will be billed at 2.5c per gal. above posted bulk plant tank car price at time and place of delivery in lots of 50 gals or more at one time. Contract customers will be billed at following differentials over tank car price, on yearly purchases: up to 35,999 gals., 2.5c over tank car price; 36 000 to 119,999 gals., 2c over; 120,000 to 239,999 gals., 1.5c; 240,000 to 479,999 gals, 1c; 480,000 gals. and over, 0.5c.

On single deliveries to all classes of commercial consumers, of less than 50 gals., s.s. price at time and place of delivery applies.

Magnolia Petroleum

Mobilgas

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Muskogee, Okla.	10	5	15	19	8
Oklahoma City	9	5	14	17	8
Tulsa, Okla.	10	5	15	19	8
Fort Smith, Ark	10.5	5	15.5	19	8
Little Rock, Ark.	10 5	7.5	18	21.5	9.5
Texarkana, Ark.	9.5	5	14.5	18.5	8.5
Dallas, Tex.	9	5	14	18	8.5
Ft. Worth, Tex.	8.5	5	13.5	17	8 5
Houston, Tex.	9	5	14	18	8.5
San Antonio, Tex.	9	5	14	18	8.5
El Paso, Tex.	11	5	16	20	10
Roswell, N. M.	11.5	††6.5	18	22	10
Santa Fe, N. M.	12.5	**7	19.5	23.5	12

Metro Gasoline (Third Grade)

Muskogee, Okla.	8	5	13	15	....
Oklahoma City	7	5	12	14	....
Tulsa, Okla.	9	5	14	17	....
Fort Smith, Ark.	10.5	5	15.5	15.5	....
Little Rock, Ark.	10.5	7 5	18	18.5	....
Texarkana, Ark.	7.5	5	12.5	15.5	....
Dallas, Tex.	7.5	5	12.5	15	....
Ft. Worth, Tex.	7	5	12	14	....
Houston, Tex.	8	5	13	16	....
San Antonio, Tex.	8	5	13	16	....
El Paso, Tex.	6.5	5	11 5	13.5	....
Roswell, N. M.	8	††6 5	14.5	17.5	....
Santa Fe, N. M.	11.5	**7	18.5	21.5	....

*In Texarkana, 4c Texas tax applies; outside Texarkana, 6.5c Arkansas tax applies.

†In Fort Smith, 4c Oklahoma tax applies outside Fort Smith, 6.5c Arkansas tax applies.

**Includes 1c city tax.

††Includes 0.5c city tax

Note: *Price basis to dealers* off s.s. price in t.w., bulk or bbl. deliveries, on Mobilgas and Ethyl, normally: to 100% dealers, 4c; to divided dealers, 3.5c, except Texas no discount. On Metro gasoline in Texas, Oklahoma and New Mexico: to 100% dealers, 3c; to divided dealers, 2.5c, except Texas no discount. On Metro, in Arkansas and Louisiana: to 100% dealers, 3.25c.

Price basis to consumers: Thru Texas, effective Jan. 1, 1936, New Mexico, effective Jan. 18, and Oklahoma, effective Feb. 20, all grades of gasoline invoiced on the same graduated scale as now allowed 100% dealers, which see in above paragraph. Thru Arkansas and Louisiana, all grades gasoline invoiced at consumer's t.w. price, which on Mobilgas and Ethyl, normally is 3.5c less than s.s. price, less following contract quantity discounts at end of month, on all three grades, on monthly purchases: 3,001 to 10,000 gals., 0.5c; 10,001 to 20,000 gals, 1c; 20,001 to 40,000 gals., 1.5c; and 40,001 gals. and over, 2c. Metro invoiced at same price as Mobilgas.

Continental Oil

Conoco Bronze Gasoline

Denver, Colo.	12	5	17	19	11
Pueblo, Colo.	12	5	17	19	13
Grand Junction, Col.	16	5	21 5	23.5	15
Casper, Wyo.	14.5	5	19.5	21.5	11.5

Continental Oil—Cont'd

Conoco Bronze Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Cheyenne, Wyo.	14.5	5	19.5	21.5	13
Billings, Mont.	16.5	6	22.5	24.5	14.5
Butte, Mont.	16	6	22	....	14.5
Great Falls, Mont.	16.5	6	22.5	24.5	14.5
Helena, Mont.	16.5	6	22.5	24.5	14.5
Salt Lake City, Utah.	16	5	21	23	16
Boise, Ida.	16.5	6	22.5	24.5	18
Twin Falls, Ida.	17	6	23	25	18
Albuquerque, N. M.	12	†6.5	18.5	20.5	13

Demand (Third Grade)

Denver, Colo.	10	5	15	17	....
Cheyenne, Wyo.	12.5	5	17.5	19.5	....
Helena, Mont.	14.5	6	20.5	22.5	....
Salt Lake City, Utah.	14	5	19	21	....
Boise, Ida.	14.5	6	20.5	22.5	....
Albuquerque, N. M.	8.5	†6.5	15	17	....

†Includes city tax of 0.5c.

Discounts: effective March 1, 1934, on gasolines thru territory, except Montana, off s.s. price: to "undivided" dealers: Ethyl and Conoco Bronze, 4c; Demand, 3c; to "divided" dealers: Ethyl and Conoco Bronze, 3.5c; Demand, 2.5c. Thru Montana, effective March 24, 1936, on gasoline, off t.w. price to "undivided" dealers: Ethyl and Conoco Bronze, 2c; Demand, 1c; to "divided" dealers: Ethyl and Conoco Bronze, 1.5c; Demand 0.5c.

S. O. California

Standard Gasoline

San Francisco, Cal.	13	4	17	18	11.5
Los Angeles, Cal.	12.5	4	16.5	17.5	9
Fresno, Cal.	13.5	4	17.5	18.5	11
Phoenix, Ariz.	15	6	21	22	†16
Reno, Nev.	14.5	5	19.5	20.5	13
Portland, Ore.	13.5	6	19.5	20.5	13.5
Seattle, Wash.	13.5	6	19.5	20.5	13.5
Spokane, Wash.	16.5	6	22.5	23.5	16.5
Tacoma, Wash.	13.5	6	19.5	20.5	13.5

Flight Gasoline (Third Grade)

San Francisco, Cal.	11.5	4	15.5	16.5	....
Los Angeles, Cal.	11	4	15	16	....
Fresno, Cal.	12	4	16	17	....
Reno, Nev.	13	5	18	19	....
Phoenix, Ariz.	13.5	6	19.5	20.5	....
Portland, Ore.	12	6	18	19	....
Seattle, Wash.	12	6	18	19	....
Spokane, Wash.	15	6	21	22	....
Tacoma, Wash.	12	6	18	19	....

†Includes 5c state tax.

Discount to dealers: effective March 3, 1936, on gasoline, off t.w. price; on Stanavo Aviation, to 100% dealers, 2c; split dealers, 1c; on Standard Ethyl and Standard Gasoline, to 100% dealers, 3c; to split dealers, 2c; on Flight gasoline, both 100% and split dealers, 2c.

To commercial consumers: effective March 3, 1936, off tank wagon price: on single deliveries of 40 gallons and over, advance quantity discount from above prices extended at time of delivery on Stanavo Aviation and Flight Gasoline, 2c per gallon; Standard Ethyl and Standard Gasolines, 3c. S.s. schedule applies on single deliveries less than 40 gallons.

On kerosine in tank car, transport truck and trailer delivery, 3c off t.w. price; plant deliveries to jobbers, 2.5c below t.w.

Canada

Prices of Imperial Oil Ltd.

Per Imperial Gallon, which is 1.2 U. S. Gallons

Imperial Three Star Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Hamilton, Ont.	15	6	21	23.5	17
Toronto, Ont.	15	6	21	23.5	17
Brandon, Man.	23.8	7	30.8	33.8	22.3
Winnipeg, Man.	22.2	7	29.2	32.2	20.7
Regina, Sask.	23.5	7	30.5	33.5	22
Saskatoon, Sask.	26.3	7	33.3	36.3	24.8
Edmonton, Alta.	25.7	7	32.7	35.7	24.2
Calgary, Alta.	23	7	30	33	21.5
Vancouver, B. C.	19	7	26	29	24
Montreal, Que.	13.5	6	19.5	22	17.5
St. John, N. B.	17	8	25	29	19.5
Halifax, N. S.	17	8	25	29	19.5

Discounts to dealers:

Maritime Provinces, 4c per gallon off s.s. price to all classes of dealers. Quebec, except Montreal City, Prairie Provinces and British Columbia, 3c to divided dealers, 4c to undivided dealers. Ontario and Montreal City, 2½c to divided dealers, 3½c to undivided dealers

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect April 20, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

Aviation Gasoline

Following are tank car and/or tank wagon prices of aviation gasoline in principal marketing territories (Stanavo aviation in all territories except Continental Oil and Magnolia Pet. Co.) Tax column includes 1c federal tax, and state tax; also municipal taxes as indicated in footnotes.

In Effect April 20, 1936

S. O. New Jersey

	Tank Car	T.W.
Bayonne, N. J.	10	12
Baltimore, Md.	10	12
Washington, D. C.		12.6
Richmond Va.		14.2
Greensboro, N. C.		14.7
Raleigh, N. C.		16.6
Charleston, W. Va.		14.2

Colonial Beacon Oil Co.

	T.W.
Brooklyn, N. Y.	12.8
Buffalo, N. Y.	13.7
Boston, Mass.	14.5

S. O. Pennsylvania

Philadelphia, Pa.	14.1
Pittsburgh, Pa.	14.9

S. O. Louisiana

New Orleans, La.	12.3
Shreveport, La.	12.6

Prices in above four territories do not include state or federal taxes. They are for 73 octane grade aviation gasoline. An 80 octane product generally brings 0.5c premium and an 87 octane product, 1.5c premium over the 73 octane grade.

Note: S.s. prices in abovef our territories are generally 6c over t.w. prices. Above t.w. prices are net, with no discounts allowed for quantity purchases. T.w. prices are generally tank car price, plus freight, plus 2.5c per gal.

S. O. Ohio

	T.W.	Tax	Total T.W.
Thru Ohio: (To Commercial Consumers) Stanavo Ethyl Aviation (73 Octane)	15.5	5	20.5

Discounts: For delivery on contract to hangar operators and resellers: 2c below commercial consumer posted t.w price.

S. O. Indiana

Chicago, Ill.	15	4	19
Indianapolis, Ind.	15.9	5	20.9
Detroit, Mich.	16.5	4	20.5
Milwaukee, Wisc.	15.3	5	20.3
Minneapolis, Minn.	15.4	4	19.4
St. Louis, Mo.	13.7	*4	17.7
Kansas City, Mo.	14.4	*4	18.4
Fargo, N. D.	16.4	4	20.4
Huron, S. D.	15.9	5	20.9
Wichita, Kans.	13.9	4	17.9

*Includes 1c city tax
**Includes 0.1c to cover sales tax.

Magnolia Petroleum

Dallas, Tex.	12	5	17

Humble Oil & Refining Co.

	Tank Car
Baytown, Tex. (exclusive of taxes)	8.5

Continental Oil Co.

	T.W.	Tax	Total T.W.
Denver, Colo.	15	5	20
Cheyenne, Wyo.	17.5	5	22.5
Helena, Mont.	19.5	6	25.5
Salt Lake City, Utah.	19	5	24
Albuquerque, N. M.	15	*6.5	21.5

*Includes city tax of 0.5c.

S. O. California

Phoenix, Ariz.	16	6	22
Los Angeles, Cal.	13.5	4	17.5
San Francisco, Cal.	14	4	18
Reno, Nev.	15.5	5	20.5
Portland, Ore.	14.5	6	20.5
Seattle, Wash.	14.5	6	20.5
Spokane, Wash.	17.5	6	23.5

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Naphtha

In Effect April 20, 1936

(In Tank Wagon or Steel Barrels; in Cents per Gallon)

	Mineral Spirits	V.M.&P. Naphtha	Light Cleaner Naphtha	*Solvent
Altoona, Pa.	....	....	....	17
Baltimore (net)	11	....	....	11
Boston (net)	13	13.5	13.5	13
Bridgeport (net)	13	13.5	13.5	13
Buffalo (net)	11.5	12.5	12.5	11.5
Chicago	16.2	16.5	15.5	15.5
Detroit	†17.9	†19	....	†19
Kansas City	13.9	14.9	14.9	13.9
Lancaster, Pa. (net)	13	14	14	13
Milwaukee	18.8	†19.8	19.8	18.8
Minneapolis	†17.9	†18.9	†18.9	†17.4
Newark (net)	11.5	....	....	11.5
New York (net)	10.5	11.5	11.5	10.5
Philadelphia (net)	11.5	12.5	12.5	11.5
Providence (net)	13	14	14	13
Rochester (net)	‡12	....	....	‡12
St. Louis	14.2	15.2	15.2	13.5
Syracuse	....	....	....	14

Naphtha (In Tank Cars)

In Tank Cars (F.o.b. refinery or seaboard terminal)

	V.M. & P. Naphtha	Solvent
Baltimore	10	9.5
New York Harbor	10	9.5
Philadelphia district	10	9.5
Providence	10	9.5

Note: 2c off above t.w. prices to large buyers in some instances.

*In the East, prices apply on product generally known as Mineral Spirits; in the middlewest, prices apply on Stanosol (S.O. Indiana grade of Stoddard Solvent).

†At the following points, these taxes and/or discounts apply on the products specified: Detroit, first three products include 3c state tax, prices applying on 150 gals. or more, with prices 1c higher for less than 150 gals.; Milwaukee, V.M. & P. price includes 4c state tax; Minneapolis, first 3 products include 3c state tax; price for solvent for less than 100 gals. is 1c higher.

‡Purchases of at least 150 gallons.

Latest Changes

From Apr. 14 to Apr. 20 inclusive. Dates and amounts of changes shown. See table for full current prices. Changes are on gasoline unless kerosine is indicated.

S. O. Indiana—Red Crown:

Chicago, up 0.5c, April 15.

Magnolia Petroleum—Mobilgas:

Houston, t.w. up 0.5c, s.s. up 1c, April 15.

San Antonio, t.w. up 0.5c, s.s. up 1c, April 17.

Metro:

Houston, t.w. up 2c, s.s. up 3c, April 15.

San Antonio, t.w. up 2c, s.s. up 3c, April 17.

Muskogee, t.w. cut 1c, s.s. cut 2c, April 14.

Corrections

Notation of amount of change and dates not previously shown in table. Table in this issue is corrected to show these changes. Changes are on gasoline unless kerosine is indicated.

Atlantic Refining—White Flash Plus:

Erie, s.s. up 2c, April 11.

Continental Oil—Demand:

Albuquerque, cut 1.5c, April 11.

Aviation:

Helena, up 1c, to 24.5c, Jan. 17; up 1c, to 25.5c, Jan. 27.

S. O. California—Aviation:

Reno, up 1.5c, April 13, instead of 2c, as reported in the general advance on page 73, April 15th issue.

Increases Petroleum Imports

WASHINGTON—Imports of petroleum products in Chile in 1935 registered marked increases over the preceding year, according to Assistant U. S. Commercial Attache H. M. Randall at Santiago.

The volume of lubricating oil went up 37 per cent; gasoline boomed by 45 per cent, and Diesel oil by 96 per cent.

As operation of motor vehicles in Chile increased only 30 per cent in 1935, the Santiago office, believes that the additional increase in gasoline imports may be accounted for by arrivals of tank steamer cargoes at the close of the year. The large increase for Diesel oil is accounted for by the increased mining activities in the north.

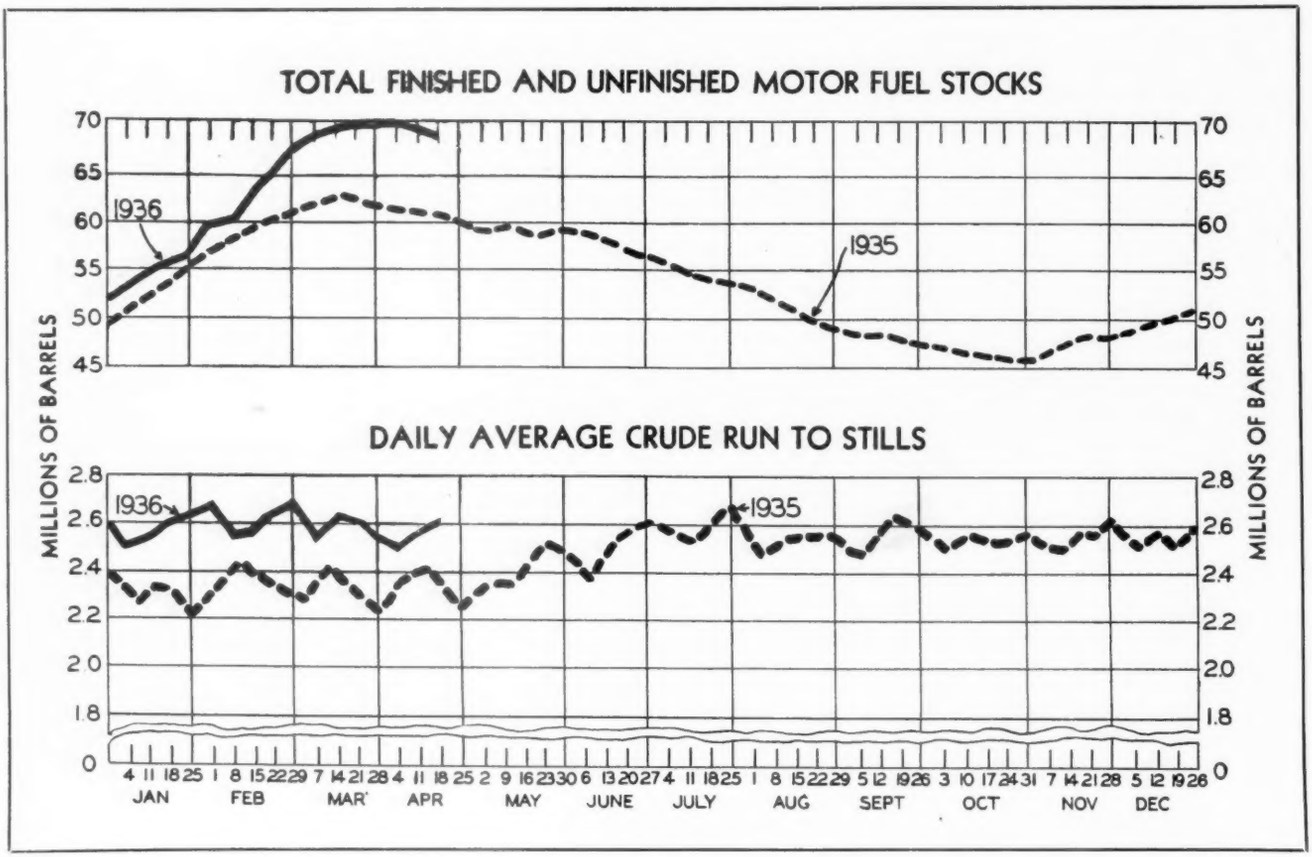
The United States is the leading source of Chile's fuel oil imports, supplying about 74 per cent in 1935, and accounted for 51 per cent of the Chilean imports of Diesel oil, 73 per cent of lubricating oil and 91 per cent of lubricating grease.

Fears Fuel Oil

WASHINGTON—The French coal industry feels "a certain amount of anxiety" concerning the growing competition of fuel oil," Consul J. G. Carter at Calais reports to the Commerce Department.

Although the French coal industry's outlook is increasingly favorable, Carter reports that the industry is advocating a campaign to confine the fuel oil trade to coastal regions, inasmuch as it is largely imported and can, "or should be," more consistently used in ships of war and commerce and to replace the importation of foreign coal than allowed to come directly into competition with the French mines.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.


TOTAL FINISHED AND UNFINISHED MOTOR FUEL STOCKS
MILLIONS OF BARRELS
70
65
60
55
50
45
1936
1935
DAILY AVERAGE CRUDE RUN TO STILLS
MILLIONS OF BARRELS
2.8
2.6
2.4
2.2
2.0
1.8
0
1936
1935
4 11 18 25 1 8 15 22 29 7 14 21 28 4 11 18 25 2 9 16 23 30 6 13 20 27 4 11 18 25 1 8 15 22 29 5 12 19 26 3 10 17 24 31 7 14 21 28 5 12 19 28
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

Motor Fuel Stocks Reduced 639,000 Barrels

(By Teletype)

NEW YORK, April 21

FOLLOWING a decline of 217,000 barrels in stocks of motor fuel the previous week, stocks again declined 639,000 barrels the week ended April 18 to 68,889,000 barrels, according to the American Petroleum Institute.

Crude runs, which had increased 83,000 barrels daily the week ended April 11, increased 40,000 barrels further the week ended April 18, to 2,602,000 barrels.

Stocks of motor fuel at refineries dropped 859,000 barrels, standing at 41,470,000 barrels. In-transit and terminal stocks increased 311,000 barrels, to 20,347,000 barrels, while stocks of unfinished gasoline declined 91,000 barrels, to 7,072,000 barrels.

The largest reduction in motor fuel stocks was in California, where they were lowered 345,000 barrels. Texas Gulf stocks declined 222,000 barrels and smaller decreases were reported elsewhere. Increases in stocks, none over 40,000 barrels, were indicated in four districts.

Crude runs in East Coast plants, which had been cut 53,000 barrels the week ended April 11, rose 30,000 barrels the past week. Oklahoma-Kansas-Missouri plants increased their runs 13,000 barrels and North Louisiana-Arkansas 15,000 barrels.

CURRENT REFINERY OPERATIONS

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Total Finished and Unfinished Motor Fuel*		Total Finished and Unfinished Motor Fuel*	Gas & Fuel Oil	Cracked Gasoline Production % Total Capacity Reporting	Daily Av. Production (Barrels) Week Ended	
		April 18	April 11	April 18	April 11	April 18	April 11	*April 18	April 11		April 18	April 11
East Coast	100.0	456,000	426,000	74.5	69.6	20,021	20,042	6,717	6,438	100.0	98,000	93,000
Appalachian	94.8	103,000	102,000	70.5	69.9	2,805	2,854	482	517	98.7	26,000	20,000
Ind., Ill., Ky.	95.9	391,000	390,000	92.2	92.0	11,660	11,697	2,927	2,850	99.7	120,000	112,000
Okla., Kans., Mo.	84.8	278,000	265,000	72.4	69.0	7,623	7,705	2,414	2,432	89.1	71,000	64,000
Inland Texas	48.5	99,000	108,000	61.9	67.5	1,754	1,733	1,502	1,493	70.9	26,000	26,000
Texas Gulf	96.8	575,000	587,000	87.4	89.2	8,381	8,603	6,487	6,744	78.5	147,000	145,000
La. Gulf	96.4	118,000	124,000	72.4	76.1	1,944	1,904	2,028	2,080	96.1	25,000	21,000
No. La., Ark.	90.0	50,000	35,000	69.4	48.6	416	391	307	294	95.7	9,000	9,000
Rocky Mt.	61.9	46,000	47,000	76.7	78.3	1,710	1,679	738	728	84.8	13,000	13,000
California	92.6	486,000	478,000	61.6	60.6	12,575	12,920	71,245	71,025	100.0	68,000	68,000
Total Reporting	89.6	2,602,000	2,562,000	75.0	73.9	68,889	69,528	94,847	94,601	95.9	603,000	571,000
Estimated U. S. Total (Bur. of Mines Basis.)		2,795,000	2,755,000			73,015	73,654	96,754	96,508		640,000	605,000

*Includes stocks at refineries, in bulk terminals, pipe lines and in transit.

INDUSTRIAL
Fuels
ACTIVE

LIGHT fuels suitable for domestic heating were pushed into the background in areas where the weather turned warm, while they remained fairly active in areas where cold weather prevailed the week ended April 18. Industrial fuels were firm in all markets.

At the same time light fuels suitable for tractor fuel came into their own in the middle western agricultural districts as spring plowing got under way. Supplies were difficult to obtain.

Two advantages of using a No. 1 oil in tractor were the lower price compared with kerosine, and the lower freight rate.

Demand for heavy fuels continued brisk as industrial operations continued to point higher. Supplies were taken off the market about as soon as they were offered.

* * *

NEW YORK, April 18.—Demand for light fuel oil maintained a fairly good pace at eastern seaboard terminals during the week ended April 18, particularly in New York and New England. Tank car and barge prices, however, were reduced 0.125 to 0.25 cent at New York harbor.

Suppliers were somewhat at a loss to explain the sharp drop in prices of the Nos. 2 and 3 oils, in view of the fairly stable market at the Gulf. Apparently, some suppliers were reluctant to carry any oil in their tanks through the summer months and were slashing prices in an effort to get rid of the oil. Generally speaking, however, the inventory position of No. 2 oil was reported satisfactory.

Industrial fuels continued steady. Demand was reported good and prices were unchanged. Several large suppliers still were short of oil and were buying on the outside to take care of their requirements. Talk of an advance in harbor prices of bunker oil still was heard in some quarters, but others thought prices would remain unchanged.

* * *

TULSA, April 18.—Reversal of weather conditions brought about a reversal also in trends of Mid-Continent fuel oils.

Milder weather brought light oils suitable for tractor fuel into the foreground.

Increased plowing in the middlewest and north stimulated movement of No. 1 oil as a substitute tractor fuel. Supplies of this oil were almost unobtainable in most Mid-Continent districts.

Tightness was not limited solely to the prime white oil, but spread to the straw colored product. One broker took on an order for No. 1 prime white and was unable to cover for less than 0.125 cent above his selling price. As a heating oil, No. 1 fuel was sluggish.

Milder weather caused Nos. 2 and 3 oils to sag. Some refiners made slight price concessions on several grades of heating oil in order to keep them moving.

Price of U. G. I. gas oil in Oklahoma was up 0.125 cent as low-priced offerings found needed outlets. The 24-26 fuel oil was steady.

Industrial and railroad fuels were in active demand.

* * *

CHICAGO, April 18.—Activity in the Mid-Western fuel oil market the week ended April 18 was confined to takings of good grades of No. 1 for tractor use, and industrial buying of heavy fuel. Domestic heating oil was lifeless, as rising temperatures over the greater portion of the middle west caused consumption to fall, sellers reported.

No. 1 oil, suitable for use in tractors, but able to move on the fuel oil freight rate, was exceptionally scarce, according to all reports. Prices advanced to a minimum of 3.875 cents for this grade April 14.

Industrial demand for heavy fuel continued at a brisk pace. While no change was noted in general prices, several grades were offered less freely, and many sellers indicated they would shortly ask higher prices if the tight market continued.

Distributor storage of domestic heating oil was reported well filled by most traders. It was believed that this market would remain inactive from now until "summer-fill" time, when interest will turn toward supplies of fuel oil for the next burner season. Prices were easier in all quarters, according to reports.

FUEL OILS

Following are tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

Prices in Effect April 20, 1936

	No. 1	No. 2	No. 3	No. 4
S. O. New Jersey				
Newark, N. J.	7.25	6.50	6.50	6.50
Atlantic City, N. J.	8	7	7	6.5
Baltimore, Md.	7.5	5.5	5.5	5
Washington, D. C.	8.25	7	7	7

Discounts: At Newark and Atlantic City, purchasers taking 50,000 gals. get discount of 0.5c per gal.

Socony-Vacuum Oil Co., Inc.
(S. O. New York Division)

New York City	7	6.75	6.75	6.25
Albany, N. Y.	7.75	7.25	7.25	6.75
Rochester, N. Y.	8.25	7.50	7.50	7.50
Boston, Mass.	7.5	6.75	6.75	6.75
Bangor, Me.	8.	7.00	7.00	7.00
Manchester, N. H.	8	7.25	7.25	7.25
Burlington, Vt.	8.75	7.75	7.75	7.75
New Haven, Conn.	7.5	6.25	6.25	6.25
Providence, R. I.	7.25	6.75	6.75	6.25

Discounts: At New York City, consumers taking 10,000 to 50,000 gals., get 0.25c per gal. discount when minimum amount has been reached; above 50,000 gals., 0.5c.

Atlantic Refining

Philadelphia, Pa.	7.50	6.25	6.25	5.75
Allentown, Pa.	8	6.75	6.75	6.75
Wilmington, Del.	7.50	6.25	6.25	5.75
Springfield, Mass.	7.50	7	..	7
Worcester, Mass.	7.75	7.25	..	7.25
Hartford, Conn.	7	7	..	7

S. O. Ohio

Ohio Statewide	8	7.75	7.50	7.25

Note: S. O. Ohio prices are for hose dumps; bucket dumps are 0.5c per gallon higher.

S. O. Indiana
Stanolex Fuel Oil

	No. 1	No. 3
Chicago	7.25	6.5
Indianapolis	*11.7	*11.2
Detroit	6.8	6.8
Milwaukee	8	7
Minneapolis	8.2	7.2
Sioux City	8.8	6.4
St. Louis	7.2	6.5
Kansas City	6.6	5.9

*Includes state tax of 4c.

***Note**: Small-lot deliveries of light fuel oils range from 0.5c to 1.5c higher than above quotations.*

Gasoline Shipments Rise

LOS ANGELES, April 14.—Total offshore tanker shipments of gasoline from California ports during March, 1936, amounted to 1,066,534 barrels, up 25,988 barrels over shipments of the commodity during the same month in 1935. Substantial increases in shipments to Atlantic Foreign and Intercoastal points were almost entirely offset by a heavy decline in Pacific Foreign movement of gasoline.

Crude petroleum offshore shipments during the month averaged 35,840 barrels daily, down 13,618 barrels from the average for a year ago. Nearly all of the 1,111,026 barrels of crude shipped went to Pacific foreign destinations.

A comparison of first quarter tanker movements for 1936 with those for a corresponding period in 1935, shows movement of gasoline in a slight increase, but crude oil, fuel oil and all other products registering declines. The result of this was that total shipments for the 1936 period averaged 142,168 barrels daily compared with 158,414 barrels moved offshore in the first three months of 1935, a net decline of 16,246 barrels daily. Pacific foreign shipments declined 10,304 barrels daily, and Intercoastal shipments declined 10,130 barrels daily, while shipments to Atlantic foreign destinations recorded an increase of 4188 barrels daily.

Munro-Long Marriage

DES MOINES—The marriage has been announced of Mrs. G. F. Munro and M. L. Long, secretary of the Iowa Petroleum Association, at Des Moines April 18.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a.m. of dates as given.

Eastern Fields

Posted by Joseph Seep Purchasing Agency

(Effective Jan. 13, 1936)

Penna. Grade Oil in Southwest Penna. Pipe Lines.....$2.17
Penna. Grade Oil in Eureka Pipe Lines (West Virginia).....$2.12
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....$1.97
Corning Oil in Buckeye Pipe Lines (Ohio) $1.42

Posted by Other Companies

Tide Water Pipe Co., Ltd.
Bradford-Allegheny district (Penna. and N. Y.) (Effective Jan. 13, 1936)..$2.45
*The Pennzoil Co.: (Effective Jan. 13, 1936)
Penna. Grade Oil in National Transit Lines*.....$2.42
Ashland Oil & Transportation Co.:
Somerset Oil in Ashland Lines (Ky.): (Effective Jan. 9, 1936)
Big Sandy River.....$1.30
Kentucky River.....$1.38
*The Pennzoil Co. posts $2.42 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other lower districts range down to $2.37 per bbl. at well.

Michigan

Posted by Pure Oil Co.

Midland, Midland County (Jan. 14, 1936) $1.32

Posted by Simrall Pipe Line Corp.

(Effective Jan. 14, 1936)

West Branch and equal grades.....$1.16
Beaverton, Crystal, Greendale, Porter and equal grades.....$1.32

Central States Fields

Posted by Ohio Oil Co.

(Effective Jan. 9, 1936)

Illinois, Princeton, Western Kentucky..$1.23
(Effective Jan. 10, 1936)
Lima.....$1.25

Posted by Stoll Oil Refining Co.

(Effective Jan. 9, 1936)

Stoll Pipe Line Oil (Ky.).....$1.28

Canadian Fields

Posted by Imperial Oil Refineries, Ltd.

Western Ontario

(Effective Sept. 9, 1933)

Petrolia.....$2.10
Oil Springs.....$2.17

Alberta—Turner Valley

(Prices f.o.b. field tankage)

(Effective Feb. 3, 1936)

Crude:		Naphtha:	
40-44.9	$1.55	†Clear	$2.70
45-49.9	2.12	†Discolored	2.46
50 and above	$2.32		

†Clear naphtha: 22 color; 10 lbs. vapor pressure, Reid method; 90% recovery; end point, 410°. Discolored naphtha: same specifications as for clear naphtha except color.

Mid-Continent

Posted by Stanolind Crude Oil Purchasing Co.

(Effective Jan. 9, 1936)

(In Oklahoma-Kansas)		(In North-North Central Texas)
Below 29	$0.94	$0.84
29-29.9	0.96	0.86
30-30.9	0.98	0.88
31-31.9	1.00	0.90
32-32.9	1.02	0.92
33-33.9	1.04	0.94
34-34.9	1.06	0.96
35-35.9	1.08	0.98
36-36.9	1.10	1.00
37-37.9	1.12	1.02
38-38.9	1.14	1.04
39-39.9	1.16	1.06
40 and above	1.18	1.08

Above Stanolind prices met as follows:
Jan. 9, by The Texas Co. in North and North Central Texas; Continental Oil in all three states.

Note: Stanolind prices in Okla.-Kans. are for quantities computed by 97% tank tables. In Texas, 99% tank tables are used, volume corrected to 60° F., and deduction for full b.s. & w. content

Posted by Carter Oil Co.

In Oklahoma

(Effective Jan. 9, 1936)

Below 25	$0.86	33-33.9	$1.04
25-25.9	0.88	34-34.9	1.06
26-26.9	0.90	35-35.9	1.08
27-27.9	0.92	36-36.9	1.10
28-28.9	0.94	37-37.9	1.12
29-29.9	0.96	38-38.9	1.14
30-30.9	0.98	39-39.9	1.16
31-31.9	1.00	40 and above	1.18
32-32.9	1.02		

Jan. 9, Carter's Oklahoma gravity and price schedule met in Oklahoma-Kansas by Sinclair-Prairie, and Humble's West Central Texas schedule met in North and North Central Texas where Sinclair-Prairie buys. Same day, Shell Petroleum met Carter in full in Oklahoma-Kansas.

Posted by Magnolia Petroleum Co.

(Effective Jan. 9, 1936)

In Oklahoma, same schedule as Carter Oil, which see above, beginning with below 25, at $0.86 and ending with 40 & above, at $1.18.

In Texas: North and North Central, including Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden; and in Central Texas, including Mexia, Wortham, and Panola county, same gravity and price schedule as Humble in West Central Texas, which see below, beginning with below 29 at $0.84, and ending with 40 and above, at $1.08.

†***Posted by Humble Oil & Refining Co.***

Texas Fields

(**West Central Texas*)

(Effective Jan. 9, 1936)

Below 29	$0.84	35-35.9	$0.98
29-29.9	0.86	36-36.9	1.00
30-30.9	0.88	37-37.9	1.02
31-31.9	0.90	38-38.9	1.04
32-32.9	0.92	39-39.9	1.06
33-33.9	0.94	40 and above.	1.08
34-34.9	0.96		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Shell Petroleum Corp., on Jan. 9, met Humble in Fisher county, except that Shell posts five lower grades, beginning with below 25 gravity at $0.76; 25-25.9, $0.78; 26-26.9, $0.80; 27-27.9, $0.82; and 28-28.9, $0.84; rest of schedule same as Humble's in West Central Texas.

†Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

**East Central Texas*

(Effective Jan. 9, 1936)

Below 29	$0.91	35-35.9	$1.05
29-29.9	0.93	36-36.9	1.07
30-30.9	0.95	37-37.9	1.09
31-31.9	0.97	38-38.9	1.11
32-32.9	0.99	39-39.9	1.13
33-33.9	1.01	40 and above.	1.15
34-34.9	1.03		

(Posted Apr. 15, 1936)

Talco, Northeast Tex.....$0.60

*Including Anderson, Cherokee, Limestone Navarro and Van Zandt counties.

Stanolind Oil & Gas Co., Jan. 20, posted in Marion County (East Central Texas), below 29 oil at $0.86, plus 2c differential, to 40 and above at $1.10.

Jan. 9, Sinclair-Prairie met Humble's prices in Mexia.

Panhandle Texas

Posted by Humble Oil & Refining Co.

(Effective Jan. 9, 1936)

	Gray County	Carson-Hutchinson
Below 35	$0.86	$0.81
35-35.9	0.88	0.83
36-36.9	0.90	0.85
37-37.9	0.92	0.87
38-38.9	0.94	0.89
39-39.9	0.96	0.91
40 & above	0.98	0.93

Jan. 9, above prices met by Sinclair-Prairie, Magnolia and The Texas Co. in the entire area, also by Continental Oil in Carson-Hutchinson.

East Texas

(Effective Jan. 9, 1936)

Stanolind, Humble, Shell, Sinclair-Prairie, Texas, Sun Oil and Magnolia.....$1.15
Shell also posted on Jan. 9, in Livingston area, Polk County, Texas, $1.15.

West Texas and New Mexico

Posted by Humble Oil & Refining Co.

(Effective Jan. 14, 1936)

(Including Andrews, Crane, Crockett, Ector, Glasscock, Howard, Winkler and Upton Counties, Texas, and Lea county, New Mexico).

Below 29	$0.75	33-33.9	$0.84
29-29.9	0.76	34-34.9	0.86
30-30.9	0.78	35-35.9	0.88
31-31.9	0.80	36 & above..	0.90
32-32.9	0.82		

Pecos, West Texas.....$0.85

Posted by Continental Oil Co.

(Effective Jan. 9, 1936)

Artesia, Jackson and Maljamar pools, N. M. $0.80

Jan. 16, Magnolia met Humble in Crane, Upton, Howard, Glasscock, Mitchell and Winkler.

Jan. 9, Texas Co. posted Winkler and Lea counties at $0.85; Crane and Upton, $0.80.

Shell Petroleum Corp., on Jan. 23, met Humble in Crane, Glasscock, Howard, Pecos (except Yates shallow pool) Winkler, and Upton counties, Tex., and in Lea County, N. Mex. On Jan. 9, Shell posted in Yates shallow pool in Pecos county, Tex., $0.75.

South and Southwest Texas

Posted by Humble Oil & Refining Co.

(Effective Jan. 14, 1936)

Darst Creek	$0.97	Pettus	$1.25
Salt Flat	0.97	Tomball	1.30
Saxet	0.90	Mirando	0.85

Shell Pet. Corp. on Jan. 9, posted $0.97 in Salt Flat district, Tex.

Anahuac (Chambers county) and Dickinson (Galveston county)
(Effective Jan. 9, 1936)

30-30.9	$1.04	36-36.9	$1.16
31-31.9	1.06	37-37.9	1.18
32-32.9	1.08	38-38.9	1.20
33-33.9	1.10	39-39.9	1.22
34-34.9	1.12	40 & above..	1.24
35-35.9	1.14		

Jan. 9, The Texas Co. posted $0.97 for Darst Creek.

Jan. 9, Magnolia posted $0.97 in Darst Creek; $1.30 in Tomball; $0.90 in Luling; $1.00 in Lytton Springs; $0.85 for Mirando; $1.10 for Cleveland, Liberty county, Tex.; $1.03 in Hardin, Liberty county, Tex.

Posted by Humble

Conroe and Raccoon Bend

(Deep sand crudes)

(Effective Jan. 9, 1936)

35-35.9	$1.24	38-38.9	$1.30
36-36.9	1.26	39-39.9	1.32
37-37.9	1.28	40 & above..	1.34

Jan. 9, Texas Co. met above prices.

North Louisiana-Arkansas

Posted by Standard Oil Co. of Louisiana

(Effective Jan. 10, 1936)

(In Caddo, Homer, Haynesville, Sabine, De Soto, Rodessa, Sarepta, Carterville, El Dorado and Miller county)

Below 25	$0.78	33-33.9	$0.96
25-25.9	0.80	34-34.9	0.98
26-26.9	0.82	35-35.9	1.00
27-27.9	0.84	36-36.9	1.02
28-28.9	0.86	37-37.9	1.04
29-29.9	0.88	38-38.9	1.06
30-30.9	0.90	39-39.9	1.08
31-31.9	0.92	40 and above.	1.10
32-32.9	0.94		

Smackover, Ark.....$0.75
Nevada, Ark..... 0.65
Urania, La. (La. Oil Refg. Co., Jan. 1, '34) 0.87
Tepetate, La. (Continental Oil, Jan. 9,'36)$1.12

The Texas Co., effective Jan. 9, posted in No. La.-Ark. same prices as Humble posts in West Central Texas. It also posted $0.80 for Smackover and $1.12 for La Fitte, La.

Magnolia Petroleum Co., effective Jan. 16, posted on No. La.-Ark. crude, prices beginning with $0.86 for below 29 gravity, plus 2 cent differential to 40 and above, at $1.10; this posting includes Rodessa, beginning March 16, 1936. It also posted on the same day, Eldorado (East Field), and Smackover, Ark., $0.75; Lockport, La., below 20 gravity, at $0.92, plus 2c differential, to 34 and above, which is $1.22; and for Iowa, La. and Cameron-Meadow field Cameron Parish, La., below 20 at $0.82, plus 2c differential, to 34 and above, at $1.12.

Stanolind Oil & Gas Co., Jan. 20, posted in Caddo Parish, La., below 29 oil at $0.86, plus 2c differential, to 40 & above at $1.10.

Shell Pet. on Jan. 9, posts same schedule in Black Bayou and White Castle, La. as Magnolia posts in Lockport, which see in above paragraph and in Iowa district, La. posts same schedule as Magnolia in Iowa and Cameron, which also see above.

(*Continued on next page*)

NEW REFINING PATENTS

Stabilization. No. 2 029 785, issued Feb. 4, 1936; filed Feb. 18, 1932; J. C. Morrell, assignor to Universal Oil Products Co.; 4 claims.

TREATMENT in the vapor phase of cracked oils of the motor fuel range and containing mono- and di- and tri-olefins with a mixture of sulfuric and phosphoric acids.

* * *

Emulsions. No. 2 026 219, issued Dec. 31, 1935; filed Jan. 30, 1935; M. De Groote and B. Keiser, assignors to Tretolite Co.; 7 claims.

PROCESS for breaking a petroleum emulsion of the water-in-oil type, in which the emulsion is subjected to an agent consisting of a sulfite addition products derived by reaction between a water-soluble sulfite and a water soluble salt of a halogenated higher fatty acid of the general formula:

$$C_nH_{2n-1-x-m}R_mHal_x—COOH$$

wherein R means hydrogen or hydroxyl, m the number 1 or more, n a number more than 8 and x, 1 or more.

* * *

Pour point depressor. No. 2 030-307, issued Feb. 11, 1936; filed April 10, 1935; F. H. MacLaren, assignor to Standard Oil Co. of Ind.; four charts; 19 claims.

IMPROVEMENT in the preparation of pour point depressors of the condensation type prepared by the chemical condensation of a chlorinated hydrocarbon with an aromatic hydrocarbon in the presence of aluminum chloride, which comprises separating monochloro and dichloro derivatives and chemically condensing the latter with an aromatic hydrocarbon in the presence of aluminum chloride.

Improvement resulted from the discovery that chlorination of paraffin wax does not occur uniformly and before all the paraffin is reacted, isomeric monochloro, dichloro and polychloro derivatives are formed.

* * *

Solvent fractionation. No. 2 030-870, issued Feb. 18, 1936; filed Oct. 5, 1932; L. M. Henderson, assignor to The Atlantic Refining Co.; no drawing; 18 claims.

OIL containing paraffinic and naphthenic hydrocarbons is brought into contact with a furoic ester to effect solution of a portion richer in naphthenic hydrocarbons. The solution so formed is separated and the remaining oil retreated with additional amounts of furoic ester.

The process is said to make possible the production of an oil of the quality normally obtained from Appalachian crudes, from crudes of the mixed base type of the Mid-Continent area.

CRUDE OIL MARKETS

Continued from preceding page

*Gulf Coastal Fields

Posted by Humble Oil & Refining Co.

(Effective Jan. 9, 1936)

Below 18	$0.88	26-26.9	$1.06
18-18.9	0.90	27-27.9	1.08
19-19.9	0.92	28-28.9	1.10
20-20.9	0.94	29-29.9	1.12
21-21.9	0.96	30-30.9	1.14
22-22.9	0.98	31-31.9	1.16
23-23.9	1.00	32-32.9	1.18
24-24.9	1.02	33-33.9	1.20
25-25.9	1.04	34 and above	1.22
Refugio heavy	$0.90		

Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Rabbs Ridge, Raccoon Bend (shallow sand), Refugio light, Sour Lake, Spindletop, Sugarland, and West Columbia.

Above gravity and crude schedule met Jan. 9 by The Texas Co., except that Texas Co. posts $0.92 for below 20. Jan. 9, Sinclair-Prairie met above Humble schedule in full.

Rocky Mountain Fields

Posted by Stanolind Oil & Gas Co.

(Effective Jan. 9, 1936)

Salt Creek, Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma-Kansas which see.	
Elk Basin, light	$1.28
Grass Creek, light	1.28
Grass Creek, heavy	0.72
Greybull-Torchlight	1.28
Iles, light, Col.	1.06
Iles, heavy	1.00
Hogback, N. M.	1.21
Frannie light (Effective Feb. 24, '36)	0.78
Frannie heavy	0.72
Hamilton Dome, Wyo.	0.67
Pondera, Mont.	1.05

Posted by Ohio Oil Co.

(Effective Jan. 9, 1936)

Elk Basin, Wyo.	$1.28
Grass Creek, light and heavy	1.28
Rock Creek	1.12
Big Muddy	1.11
Sunburst, Mont.	1.25

Posted by Other Companies

(Effective Jan. 9, 1936)

Cutbank, Mont. (*Internatl. Refg. Co.)	$1.50
Cat Creek, Mont. (Continental Oil)	1.28

*Texas Co. subsidiary.

CALIFORNIA, Posted by Standard Oil of California

All gravities above those quoted take highest price offered in the field. Effective Feb. 25, 1936 except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective Mar. 7, 1936

Gravity	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills, **Midway-Sunset	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$0.80	0.79	0.74	0.78	0.79	0.80	0.76	....	....	0.80	0.76	0.76	0.77	0.78	....	0.70	....	0.65	0.70	0.65	0.70	0.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	....	.70	0.70	.66	.74	.66	.74	.71	0.70
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	....	....	.70	.68	.78	.68	.78	.72	.70
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	....	.73	.71	.82	.71	.82	.74	.70
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	....	.77	.74	.87	.74	.86	.78	.72
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	....	.80	.77	.92	.77	.90	.82	.76
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.80	.97	.80	.94	.86	.79
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	....	.88	.83	1.01	.83	.98	.90	.83
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	....	.91	.86	1.06	.86	1.02	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.96	1.06	.95	....	.95	.88	1.10	.88	1.06	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	....	.99	.91	1.15	.91	1.10	....	....
29-29.9	1.17	1.15	.93	1.18	1.18		1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	....	1.02	.94	1.20	.94	1.14	....	....
30-30.9	1.21	1.19	.95	1.22	1.21		1.21	1.17	.95	....	....	....	1.07	1.17	1.08	....	1.06	.97	1.25	.97	1.18	....	....
31-31.9				....	1.24		1.24	1.22	.97	....	....	....	1.11	1.21	1.12	....	1.09	.99	1.29	.99			
32-32.9	*Elwood Terrace			....	1.27		1.27	1.27	1.00	....	....	....	1.14	1.25	1.16	....	1.13	1.02	1.34	1.02	Kettleman Hills		
33-33.9	....	1.28	....	....	....		....	1.32	....	....	....	....	1.18	1.28	1.20	....	1.17	1.04	1.38	1.04	....	1.19	....
34-34.9	....	1.32	....	....	....		....	1.37	....	....	....	....	1.22	1.32	1.25	....	1.20	....	....	....	....	1.23	....
35-35.9	....	1.35	....	....	....		....	1.42	....	....	....	....	1.25	....	1.29	....	....	....	....	....	....	1.27	....
36-36.9	....	1.39	....	....	....		....	1.46	....	....	....	....	1.29	....	1.33	....	....	....	....	....	....	1.31	....
37-37.9	....	1.43	....	....	....		....	1.51	....	....	....	....	1.32	....	1.37	....	....	....	....	....	....	1.35	....
38-38.9	....	....	....	....	....		....	1.56	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	1.39	....
39-39.9	....	....	....	....	....		....	1.61	....	....	....	....	1.40	....	....	....	....	....	....	....	....	1.43	....
40-40.9	....	....	....	....	....		....	1.66	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

F.O.B. Standard Pipe Line

*F.o.b. ship.

‡Also McKittrick, Kern River, Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted. **Except Lakeview Area.

SEABOARD MARKETS, EXPORT AND COASTWISE

Prices do not include Federal tax. Where $ mark is shown, prices are per barrel of 42 U. S. gallons

Eastern Domestic

(Prices in cents per gallon tank car lots, unless otherwise noted, f.o.b. refinery or seaboard terminal, representing majority of sales and quotations to jobbers and/or consumers. Florida and S. Carolina inspection tax not included.)

*Motor Gasoline

Prices April 20	60-64 Octane	65 Octane and Above
New York harbor	6.75	7.00
New York harbor, barges	6.50	6.75
Philadelphia district	6.75	7.00
Baltimore district	6.75	7.00
Norfolk district	6.75	7.00
Wilmington, N. C. district	6.75	7.00
Charleston, S. C., district	6.75	7.00
Savannah district	6.75	7.00 – 7.25
Jacksonville district	6.75	7.00 – 7.25
Portland district	7.25	7.50
Boston district	6.75 – 7.00	7.00 – 7.25
Boston district, barges	6.50 – 6.75	6.75 – 7.00
Providence district	7.00	7.25
Providence district, barges	6.75	7.00

*Due to lack of companies offering U. S. Motor gasoline, 59 octane and below in the open market, prices for this grade are discontinued. Quotations nominally are 0.25c below those for 60-64 octane grade.

Water White Kerosine

Prices April 20			
New York harbor	4.625– 4.75	Savannah district	5.50 – 5.75
N. Y. harbor, barges	4.50 – 4.625	Jacksonville district	5.50 – 5.75
Philadelphia district	5.00 – 5.25	Portland district	5.50
Baltimore district	5.25	Boston district	5.00
Norfolk district	5.25	Boston dist., barges	4.875
Wilmington, N. C.	5.25	Providence district	5.00
Charleston, S.C., dist.	5.25	Providence, barges	4.875

*Fuel Oils

Prices April 20	New York harbor	New York harbor, barges	Philadelphia district
No. 1	4.625– 4.75	4.50 – 4.625	5.00 – 5.25
No. 2	4.25 – 4.375	4.125– 4.25	4.50
No. 3	4.25 – 4.375	4.125– 4.25	4.50
No. 4	4.00	3.875	4.00
No. 5 (per barrel)	$1.25	.....	$1.25
No. 6 (per barrel)	$1.05	.....	$1.05

	Baltimore district	Boston district
No. 1	5.25	5.00
No. 2	4.50	4.50
No. 3	4.50	4.50
No. 4	4.25	4.25
No. 5 (per barrel)	$1.25	$1.25
No. 6 (per barrel)	$1.05	$1.05

	Boston dist., barges	Providence district	Providence dist., barges
No. 1	4.875	5.00	4.875
No. 2	4.375	4.50	4.375
No. 3	4.375	4.50	4.375
No. 4	4.125	4.00	3.875

*Fuel oils meet specifications of U. S. Commercial Standards CS12-35.

	Bunker Oil Grade C Per Barrel	Diesel Oil Ships' Bunkers Per Barrel	Gas Oil 28-34 Gravity Per gallon	Diesel Oil Shore Plants Per gallon
New York harbor	*$1.05	*$1.65	4.50	4.50
Philadelphia dist.	*$1.05	*$1.65	4.50	....
Baltimore district	*$1.05	*$1.65	4.50	....
Norfolk district	*$1.05	*$1.65	4.50	....
Charleston district	$1.00	$1.65	.....	....
Savannah district	$1.00	$1.89	.....	4.75
Jacksonville dist.	$1.00	$1.995	.....	4.75
Tampa district	$1.00	$1.995	.....	....
Portland district	$1.15	$1.75	.....	....
Boston district	$1.05	*$1.65	.....	....
Providence district	$1.05	$1.65	.....	....

*Lighterage for bunker oil, 5c per bbl. additional; for Diesel oil, 6.5c per bbl. additional.

Pacific Export

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

Prices—	April 20	April 13	April 6
53-55 U. S. Motor	4.75 – 5.50	4.75 – 5.50	4.75 – 5.25
400 e.p. blend 65 Octane and above	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
38-40 w.w. kerosine, 150 fire point	4.25 – 5.00	4.25 – 5.00	4.25 – 5.00
41-43 w.w. kerosine	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
44 water white kerosine	5.00	5.00	5.00
Prime wh. kerosine	3.25 – 4.25	3.25 – 4.25	3.25 – 4.25
In Cargo lots, per barrel:			
Diesel fuel oil, above 23.9°	$1.05 –$1.20	$1.05 –$1.20	$1.05 –$1.25
Diesel fuel oil, under 23.9°	$1.00 –$1.10	$1.00 –$1.10	$1.00 –$1.15
30-34 gas oil	$1.00 –$1.10	$1.00 –$1.10	$1.00 –$1.15
Grade C fuel oil	$0.75 –$0.85	$0.75 –$0.85	$0.75 –$0.85

Pacific Export (cont'd)	April 20	April 13	April 6
In Ships' Bunkers, or deep tank lots, per barrel:			
Diesel fuel oil, above 23.9 gravity	$1.125–$1.25	$1.125–$1.25	$1.125–$1.30
Diesel, under 23.9 gravity	$1.025–$1.05	$1.025–$1.15	$1.025–$1.15
Grade C fuel oil	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
Cased Goods:			
Gasoline, U. S. Motor	$1.40 –$1.50	$1.40 –$1.50	$1.40 –$1.50
Gasoline, 400 e.p. blend	$1.60 –$1.75	$1.60 –$1.75	$1.60 –$1.75
38-40 w.w. kerosine, 150 fire point	$1.15 –$1.30	$1.15 –$1.30	$1.15 –$1.30
Kerosine, prime white	$1.15 –$1.20	$1.15 –$1.20	$1.15 –$1.20

New York Export

(Prices in cents per gallon in barrels, F.a.s. New York)

Cylinder Oils (Pennsylvania Products)

Bright stock:			
Light, 25 pour point	26.50	26.00	26.00
Dark, 25 pour point	26.00	25.50	25.50
Neutral oil:			
200 3 color, 25 pour point	27.00	27.00	27.00
150 3 color, 25 pour point	23.00	23.00	23.00
600 Warren E filtered	21.50	20.50	20.50
600 stm. rfd. unfiltered	18.50 –19.00	18.00 –18.50	18.00 –18.50
650 stm. rfd. unfiltered	19.50 –20.00	19.00 –19.50	19.00 –19.50
600 flash, steam refined	20.50 –21.00	20.00 –20.50	20.00 –20.50
630 flash, steam refined	24.50	23.50 –24.50	23.50 –24.50

Wax Domestic *and* Export

(Prices in cents per pound. Tests made by A. S. T. M. methods. Melting points shown below, however, are A. M. P., 3° higher than A. S. T. M. (E. M. P.) melting points. Export prices are f.a.s. carload lots. Domestic prices are f.o.b. refineries in New York and New Orleans districts, in bags, carload lots, with 0.2c discount allowed for shipment in bulk.)

	New York		New Orleans	
Prices—April 20	*Domestic*	*Export*	*Domestic*	*Export*
124-6 Y.C. scale	2.50 – 2.60	2.50 – 2.60	2.55 – 2.60	2.55 – 2.60
122-4 W.C. scale	2.50 – 2.60	2.50 – 2.60	2.55 – 2.60	2.55 – 2.60
124-6 W.C. scale	2.50 – 2.60	2.50 – 2.60	2.60 – 2.75	2.60 – 2.75
123-5 Fully refined	4.45	4.125	4.45	4.125
125-7 Fully refined	4.55	4.25	4.55	4.25
128-30 Fully refined	4.80	4.50	4.80	4.50
130-2 Fully refined	5.05	4.75	5.05	4.75
133-5 Fully refined	*5.35	5.25	*5.35	5.25
135-7 Fully refined	*5.60	5.50	....	....

*Shipment either in bags or in bulk.

Gulf Coast

(Prices are f.o.b. ship at Gulf oil terminals representing traders' opinions except prices specified to the contrary. Prices cover bulk shipments of 20,000 barrels or more, unless otherwise noted.)

Motor Gasoline

For Domestic Shipment

Prices—	April 20	April 13	April 6
59 octane and below	5.625– 5.75	5.625– 5.75	5.625– 5.75
60-64 octane number	6.00	6.00	6.00
65 octane and above	6.125– 6.25	6.125– 6.25	6.125– 6.25

Fuel Oils

No. 1 Fuel oil	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
No. 2 Fuel oil	3.625	3.625	3.625
No. 4 Fuel oil	3.125	3.125	3.125

*Sale only.

Kerosine

41-43 w.w.	3.75 – 3.875	3.75 – 3.875	3.875

Gasoline

For Export Shipment

U. S. Motor gasoline	5.50	5.50	5.50
60-62, 400 e.p gasoline	5.50	5.50	5.50 – 5.625
61-63, 390 e.p. gasoline	5.625	5.625	5.625– 5.75
64-66, 375 e.p. gasoline	5.75	5.75	5.75 – 6.00

Kerosine

44 water white	4.25	4.25	4.25
41-43 water white	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
41-43 prime white	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875

(Continued on next page)

SEABOARD MARKETS, EXPORT AND COASTWISE

Prices do not include Federal tax. Where $ mark is shown, prices are per barrel of 42 U. S. gallons

(Continued from preceding page)

Prices—	April 20	April 13	April 6
Gas and Bunker Oils			
For Domestic and/or Export Shipment			
*26-30 translucent gas oil	3.125- 3.25	3.125- 3.25	3.125- 3.25
*30 plus translucent gas oil	3.125- 3.25	3.125- 3.25	3.125- 3.25
*30 plus transp. gas oil	3.25	3.25	3.25
Diesel Oil Ships' bunkers	†$1.50	†$1.50	†$1.50
Grade C bunker oil, for ships' bunkers, per bbl	†$0.90	†$0.90	†$0.90
Grade C bunker oil, per bbl. in cargoes	$0.80	$0.77 -$0.80	$0.80
Mexican Crude and Bunker Oils (F.o.b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl	$0.73 -$0.75	$0.73 -$0.75	$0.77 -$0.80
Grade C bunker oil, ships' bunkers, taxes paid, per bbl	$0.90	$0.90	$0.90
Mid-Continent Lubricating Oils (Prices in cents per gallon in bbls. f.a.s. Gulf terminals. In drums and new barrels, 0.5c to 1c higher per gal. in some instances.)			
190-200 vis. D 210 brt. stk	26.00	25.50	25.50
150-160 vis. D. 210 brt. stk:			
0-10 pour point	23.00	22.50	22.50
10-25 pour point	22.50	22.00	22.00
25-40 pour point	22.00	21.50	21.50
150-160 vis. E 210 brt. stock	22.00	21.50	21.50
120 vis D 210 bright stock	21.50	21.00	21.00
180 vis. No. 3 color neutral oil:			
0-10 pour point	17.25 -17.50	17.25 -17.50	17.25 -17.50
15-30 pour point	16.25 -16.50	16.25 -16.50	16.25 -16.50
200 vis. No. 3 color neutral oil:			
0-10 pour point	17.75 -18.00	17.75 -18.00	17.75 -18.00
15-30 pour point	16.75 -17.00	16.75 -17.00	16.75 -17.00

*Less than ½ of 1% sulphur. †Lighterage 5c per bbl additional.

Mid-Continent Lubricating Oils Cont'd

Prices—	April 20	April 13	April 6
600 s.r. olive green	12.50	12.00 -12.50	12.00 -12.50
600 s.r. dark green	10.50 -11.00	10.00 -10.50	10.00 -10.50
631 s.r.	17.50 -18.00	17.00	17.00

South Texas Lubricating Oils

(Viscosity at 100° F., pour test 0. Tanker, f.o.b. Gulf oil terminals, for export shipment)

Vis. Color			
Unfiltered Pale Oils:			
100 No. 3	5.25 - 5.50	5.25 - 5.50	5.25 - 5.50
200 No. 3	6.375- 7.00	6.375- 7.00	6.375- 7.00
300 No. 3	7.00 - 7.50	7.00 - 7.50	7.00 - 7.50
500 No. 3½	7.875- 8.50	7.875- 8.50	7.875- 8.50
750 No. 4	9.00 - 9.25	9.00 - 9.25	9.00 - 9.25
1200 No. 4	9.25 - 9.50	9.25 - 9.50	9.25 - 9.50
2000 No. 4	9.75 -10.25	9.75 -10.25	9.75 -10.25
Red Oils:			
100 No. 5-6	5.25 - 5.50	5.25 - 5.50	5.25 - 5.50
200 No. 5-6	6.125- 6.75	6.125- 6.75	6.125- 6.75
300 No. 5-6	6.75 - 7.00	6.75 - 7.00	6.75 - 7.00
500 No. 5-6	7.25 - 7.625	7.25 - 7.625	7.25 - 7.625
750 No. 5-6	9.00 - 9.25	9.00 - 9.25	9.00 - 9.25
1200 No. 5-6	9.25 - 9.50	9.25 - 9.50	9.25 - 9.50
2000 No. 5-6	9.75 -10.25	9.75 -10.25	9.75 -10.25

Note: Red oil prices shown above cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shipments per ton of 2240 pounds. British sterling: to U. S. ports, cents per barrel)

Rates—April 20	Crude &/or Fuel Last Paid	Crude &/or Fuel Owners Ask	Refined Oil &/or Spirits Last Paid	Refined Oil &/or Spirits Owners Ask
Calif. U.K./Cont.*	18/6	19/-20/	17/	18/-19/
Gulf-U.K./Cont.*	14/3	14/-14/3	14/6	14/-14/6
Calif.-N. Atlantic (not E. of N. Y.)	....	‡55c	...	‡55c
Gulf-N. Atlantic** (not E. of N. Y.)	†20c	†20c	18c	18-19c

Note: Dirty boat quotations are enlarged to cover, "Fuel and Light Crude" quotations.

*Continental ports in range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate: Tampico 2c to 3c per bbl. additional.

†Rates for heavy crude or fuel 1c to 2c higher than for light crude.

‡Nominal

Saybolt Wins World Honors With 7 Sailfish

NEW YORK—Many oil men travel south during the winter to enjoy Florida's warmth, but few return from such a vacation bearing world honors as did J. W. Saybolt, lubrication department executive of the Standard Oil Co. of New Jersey.

When a fishing yacht docked late on Jan. 23 at Miami, history was made in sailfish fishing. The boat bore two world records. Two fishermen on the boat that day had a combined catch of 12 sailfish, and that broke a world's record of 12 years' standing.

Seven of the 12 sailfish were landed by Mr. Saybolt. His seven sailfish constituted a world's record catch for one man in one day. The photograph shows Mr. Saybolt proudly exhibiting seven sailfish.

Buys Equatorial Claim

NEW YORK, April 17.—The Socony-Vacuum Oil Co., Inc. has bought from the Carib Syndicate, Ltd., the latter's claim against the Equatorial Oil Company of Del., it was announced today. Socony also purchased 898,000 shares of Equatorial stock.

The only asset of the Equatorial company is a tract of land in Colombia, South America, which was originally purchased as oil land but was never developed.

Your specifications will not protect you against this MIXED "SO CALLED" TALLOW OIL

Economy and freedom from trouble demand this MARTIN DENNIS TALLOW OIL

OIL DIVISION

THE MARTIN DENNIS COMPANY 859 Summer Ave. Newark, N. J.

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Quincy, Ill. U. S. A.

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Gentlemen:

Without obligation, please send me data on Quincy Service Station Compressors.

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NEW PATENTS

Prepared by R. E. Burnham, patent and trade-mark attorney, 511 Eleventh street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 25c each. State number of patent and name of inventor when ordering.

March 24, 1936

REFINING

Tube still or heater and like. Povl Ostergaard, Mount Lebanon, Pa., assignor to Gulf Oil Corp. Filed May 24, 1935. No. 2,035,337.

Refining of petroleum oils. Herschel G. Smith, Swarthmore, Pa., assignor to Gulf Oil Corp. Filed May 2, 1932. No. 2,035,349.

Dewaxing paraffin distillates. Audsley V. Rhodes, Linden, N. J., assignor to Standard Oil Development Co., Filed May 24, 1933. No. 2,035,406.

Olefin concentration and polymerization. Robert F. Ruthruff, Joseph K. Roberts, and Morris T. Carpenter, Hammond, Ind., assignors to Standard Oil Co. (Ind.). Filed July 17, 1933. No. 2,035,409.

Process for stabilizing white oils. Francis M. Archibald, Roselle, N. J., assignor to Standard Oil Development Co. Filed Feb. 19, 1931. No. 2,035,418.

MISCELLANEOUS

Metered liquid-dispensing apparatus. George W. Stedwell, Brooklyn, N. Y., assignor to Keystone Controls, Inc., New York, N. Y. Filed June 30, 1932. No. 2,034,845.

Process of preparing adsorbent clays. Edward M. Slocum, Macon, Ga. Filed May 21, 1934. No. 2,034,996.

Sulphur resins and methods of preparation. William Seaman, Glens Falls, N. Y., assignor to Standard Oil Development Co. Filed Nov. 16, 1931. No. 2,035,098.

Composition of matter obtained from hydrocarbon acid sludge. John C. Bird, Elizabeth, N. J., assignor to Standard Oil Development Co. Filed Jan. 6, 1932. No. 2,035,112.

Apparatus for molding wax. Aden A. English, Cranford, N. J., assignor to Standard Oil Development Co. Filed Apr. 13, 1933. No. 2,035,117.

Aldehyde synthetic resins prepared from petroleum. Stewart C. Fulton, Elizabeth, N. J., assignor to Standard Oil Development Co. Filed June 20, 1932. No. 2,035,123.

Articles fabricated with asphaltenes and method of making such articles. Stewart C. Fulton, Elizabeth, and Vladamir Kalichevsky, Gloucester, Mass., assignors to Standard Oil Development Co. Filed Dec. 12, 1931. No. 2,035,122.

Non-drip nozzle. Lorrie B. Warren, Pampa, Tex. Filed May 7, 1935. No. 2,035,438.

March 31, 1936

REFINING

Purifying naphtha. Francis M. Archibald and Philip Janssen, Elizabeth, N. Y., assignors to Standard Alcohol Co. Filed Nov. 2, 1933. No. 2,035,449.

Treatment of hydrocarbons. Warren F. Faragher, Woodbury, N. J., and Eugene J. Houdry, Paris, France, assignors to Houdry Process Corp. Filed July 11, 1932. No. 2,035,467.

Production of motor fuel. Eugene J. Houdry, assignor to Houdry Process Corp. Filed July 20, 1932. No. 2,035,478.

Removal of wax from hydrocarbon oil. Bernard Y. McCarty, Beacon, N. Y.,

and William E. Skelton, Fort Worth, Tex., assignors to Texas Co. Filed June 8, 1934. Nos. 2,035,490 and 2,035,491.

Petroleum refining system. William T. Hancock, Long Beach, Calif. Filed June 29, 1932. No. 2,035,547.

Processes for purifying and refining hydrocarbon oils. Arthur Lachman, Berkeley, Calif., assignor to Vapor Treating Processes, Inc., Los Angeles, Calif. Filed June 26, 1929. Nos. 2,035,607 and 2,035,608.

Process of purifying and refining hydrocarbon oils with copper salts. Arthur Lachman, assignor to Vapor Treating Processes, Inc. Filed July 26, 1929. No. 2,035,609.

Process of purifying and refining hydrocarbon oils with aluminum salts. Arthur Lachman, assignor to Vapor Treating Processes, Inc. Filed July 26, 1929. No. 2,035,610.

Continuous process of chemically treating petroleum oil. Leo D. Jones, Philadelphia, Pa., assignor to Sharples Specialty Co. Filed May 15, 1933. No. 2,035,655.

Purification of naphthenic acids. Frederick J. Ewing, Pasadena, Calif., assignor to Union Oil Co. Filed August 12,1933, October 2, 1933, and Mar. 12, 1934. Nos. 2,035,696, 2,035,741, and 2,035,742.

Process for treatment of hydrocarbons. Arthur D. Smith, Chicago, Ill., assignor to Jenkins Petroleum Process Co. Filed Nov. 23, 1931. No. 2,035,727.

Treatment of tars. Richard F. Davis, Chicago, Ill., assignor to Universal Oil Products Co. Filed Jan. 29, 1934. No. 2,035,868.

Purification of gases. Vladimir Ipatieff, Chicago, Ill., assignor to Universal Oil Products Co. Filed Aug. 31, 1932. No. 2,035,889.

Method of treating hydrocarbons. Jacque C. Morrell, Chicago, Ill., assignor to Universal Oil Products Co. Filed Nov. 29, 1933. No. 2,035,910.

Method of distilling oils. George B. Coubrough, Long Beach, Calif., assignor to Lummus Co. Filed Mar. 23, 1933. No. 2,035,945.

Process for treating naphtha. Alfred A. Wells, Roselle Park, N. J., assignor to Standard Oil Development Co. Filed Nov. 12, 1931. No. 2,036,166.

MISCELLANEOUS

Method of producing drying oil and varnish from hydrocarbon material. August P. Bjerregaard, Okmulgee, Okla., assignor to Gray Processes Corp. Filed Aug. 30, 1930. No. 2,036,455.

Manufacture of resins. William B. Borst and Clarence G. Gerhold, Chicago, Ill., assignors to Universal Oil Products Co. Filed Oct. 29, 1934. No. 2,035,860.

April 7, 1936

REFINING

Art of dewaxing hydrocarbon oils. John A. Anderson, Chicago, Ill., assignor to Standard Oil Co. (Ind.). Filed Aug. 27, 1930. No. 2,036,188.

Partial oxidation of hydrocarbons. Joseph H. James, Pittsburgh, Pa. Filed Jan. 6, 1921. No. 2,036,215.

Treatment of petroleum sludges and sludge acids. Jack Robinson, Wood River, Ill., assignor to Standard Oil Co. (Ind.). Filed June 30, 1932. No. 2,036,299.

Process of separating gasoline from cracked mineral oil. Arthur E. Pew, Jr., Bryn Mawr, and Henry Thomas, Ridley Park, Pa., assignors to Sun Oil Co. Filed Apr. 18, 1930. No. 2,036,358.

Treatment of mineral oils. Leo P. Chebotar, Beacon, N. Y., assignor to Texas Co. Filed Feb. 27, 1932. No. 2,036,396.

Cracking system. George C. Hargrove, Westfield, N. J., assignor to Gasoline Products Co. Filed Mar. 4, 1931. No. 2,036,965.

With these Quality Motor Oils

These motor oils are all carefully refined from 100% pure Pennsylvania crude oils by an improved solvent process that removes sludge and carbon-forming impurities and leaves nothing but the finest lubricating elements. Beaver Penn, Fort Pitt and Four State motor oils are attractively packaged in refinery-sealed, tamper-proof cans or steel drums.

Exclusive selling rights in your marketing area for any one of these high quality, fast selling motor oils are yours for the asking. The extra quality of these motor lubricants will create bigger profits and more satisfied customers for you.

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Gentlemen:
Send me particulars about the new Freedom Solvent Processed Oils.

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100% PURE PENNSYLVANIA OIL

Wormhoudt Joins Cushman Wilson Oil Company

TULSA, April 20.—H. E. Wormhoudt, vice-president in charge of Iowa-Nebraska territory for the Barnsdall Refining Corp., resigned March 18 to become vice-president of the Cushman-Wilson Oil Co. The Cushman-Wilson Oil Co. is an Independent marketer, formerly known as the International Oil Co. of Iowa.

Mr. Wormhoudt, well known among Independent oil men, was for 25 years with the Manhattan Oil Co., producer, refiner and large-scale marketer. This was previous to absorption of the Manhattan by the Independent Oil & Gas Co. in 1928. He became general sales manager of the Independent with headquarters at Tulsa. When the latter was merged with the Phillips Petroleum Co., he became assistant general sales manager, with headquarters at Bartlesville. In November, 1933 he was made vice-president and general manager of the Mona Motor Oil Co., Council Bluffs, Ia. and when this company was acquired by the Barnsdall, he was placed as vice-president.

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Busy days ahead—profit days for the jobber smart enough to stock up on quality. *Thoroughbred Quality* like CUSHING'S high octane, anti-knock gasoline. A real sales builder. Safe to handle—safe to sell, because its quality is refined in! It's the motor fuel sensation—*the gasoline, Jobbers interested in building profits are selling!*

Cannonball Service

WIRE, WRITE OR PHONE
FOR QUOTATIONS

Anti-Knock 400 End Point
60-62 Better than U. S. Motor
60-62 Under 400 End Point
64-66 Under 375 End Point
68-70 Under 360 End Point
42-44 W. W. D. T. Kerosene
38-40 Light Straw Zero Distillate
32-36 Overhead uncracked Gas Oil
Cracked Fuel Oil

Gulf Wins 65,000 Bbl. Navy Fuel Award

By Teletype

WASHINGTON, April 21.—Gulf Refining Co. has been awarded a contract for supplying 65,000 barrels of navy specification fuel oil, ship's bunkers, at $1.05 per barrel, f.o.b. Beaumont, Texas, it was learned today. Navy officials said that several other companies submitted bids which were opened here April 20. Delivery is to be made f.o.b. cargo tanks and bunkers of U. S. S. Salinas at company's Beaumont plant about May 1.

Despite the fact that not a single bid was received at the opening April 14 when bids were asked for large quantities of Bunker oil, f.o.b. the Gulf, during April, May and June, Navy officials believe that satisfactory arrangements can be made to take care of the Navy's needs. They said it was not "unusual" for no bids to be received at a bid opening.

Service Station Accounting

Erie Meter Systems, Inc., Erie, Pa., now has available the Day-Chek service station accounting system designed by Remington-Rand, Inc., for Erie computer pump users to give an up-to-the-minute picture of gallonage from month to month, by days. It is said to be "a time-saving sales check that is even more important than your cash register" because sales efforts can be adjusted to fit daily sales results.

It is contained in a 9½ x 12¼ inch leatherette binding. It is not offered for sale as a separate item.

Another Boy for Reidys

CHICAGO—A son was born to Mr. and Mrs. J. F. Reidy April 12 at the Oak Park Hospital. Mrs. Reidy and James Michael, the newcomer, are doing nicely. Mr. Reidy is manager of fuel oil sales for Globe Oil & Refining Co., Chicago.

COMING MEETINGS

(*Continued from page* 9)

National Petroleum Association, Atlantic City, N. J., Sept. 16, 17, 18.

National Oil Marketers Association, annual convention, Stevens Hotel, Chicago, Ill., Oct. 27 to 29.

American Petroleum Institute, 17th annual meeting, Chicago, Nov. 9 to 12.

Independent Petroleum Association of America, annual meeting, Oklahoma City, Okla., Nov. 30 and Dec. 1.

1937

Kentucky Petroleum Marketers Association, Brown Hotel, Louisville, Ky., Feb. 8, 9, 10.

In View of the Spring Months Just Ahead

it is natural to assume a tremendous market for petroleum products will be created.

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As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

DITZCO, Ser. No. 374,712. Ditzler Color Company, Detroit, Mich. Filed Feb. 11, 1936.
For Liquid and Paste Paints, Paint Primers, Paint Enamels, and Lacquers.

AMOCO, Ser. No. 373,290. The American Oil Company, Baltimore, Md. Filed Jan. 3, 1936.
For Anti-Freeze for Radiators.

SUN GOLDEN OIL, Ser. No. 357,187. Sun Oil Company, Philadelphia, Pa. Filed Oct. 17, 1934.
The words "Golden Oil" are disclaimed apart from the mark.
For Lubricating Oil.

SUPER BODY, Ser. No. 368,912. Waverly Oil Works Company, Pittsburgh, Pa. Filed Aug. 31, 1935.
"Body" is disclaimed apart from mark.
For Lubricating Oils and Greases.

FLOTEX, Ser. No. 371,242, Windsor-Lloyd Products, Inc., Wilmington, Del. Filed Nov. 5, 1935.
For Rust-Proof Anti-Freeze Preparation for Automobiles and Similar Radiators.

LOOSITE, Ser. No. 373,314. Motor Fume Utilizer Corporation, Long Island City, N. Y. Filed Jan. 3, 1936.
For Solvent and Cleaner for Dissolving Oil Residues and Sludge Formations and Cleaning Crank Cases and Lubricating Systems of Internal Combustion Engines, but Incidentally Useful for Other Purposes.

ULTRAVIOL, Ser. No. 372,147. Sherwood Petroleum Company, Inc., Brooklyn, N. Y. Filed Nov. 30, 1935.
For Irradiated Mineral Oils for Therapeutic and Cosmetic Use.

TARGET HITS THE SPOT, picture of a red and blue target, with center of target and arrow silver-gray. Ser. No. 372,294. Benjamin Weiss, doing business as Ohio Chemical Co., Brooklyn, N. Y. Filed Dec. 5, 1935.
For Compound for Use in Stopping Leaks in Automobile and Tractor Radiators.

ALEMITE, Ser. No. 373,002. Stewart-Warner Corporation, Chicago, Ill. Filed Dec. 23, 1935.
For Anti-Freeze Solutions.

Picture of a man with an oil can in his hand, Ser. No. 374,263. Tide Water Oil Company, Bayonne, N. J., and New York, N. Y. Filed Jan. 29, 1936.
For Gasoline, Lubricating Oils, and Greases.

UNIMOLD, Ser. No. 373,241. Union Oil Company of California, Los Angeles, Calif. Filed Dec. 31, 1935.
For Lubricating Oils and Form Oils

Used on Forms Employed for Casting Concrete.

IN LU CITE, Ser. No. 373,529. International Lubricant Corporation, New Orleans, and Southport, La. Filed Jan. 10, 1936.
For Lubricating Greases.

BEAVER-PENN, No. 333,596. Mar. 24, 1936. The Freedom Oil Works Company, Freedom, Pa. Filed June 2, 1933.
For Lubricating Oils.

SENTINEL, and picture of a soldier, Ser. No. 372,086. Cliffs Dow Chemical Company, Marquette, Mich. Filed Nov. 29, 1935.
For Materials for Use in Anti-Freeze Solutions.

RED BIRD, picture of a bird, Ser. No. 369,110. Southern Independent Oil and Refining Company, Inc., Evansville, Ind. Filed Sept. 7, 1935.
For Gasoline, Lubricating Oils, and Greases.

WOCOIL, Ser. No. 373,581. Whiting Oil Company, Clifton Forge, Va. Filed Jan. 11, 1936.
For Motor Lubricating Oil.

AMOCO, Ser. No. 373,586. The American Oil Company, Baltimore, Md. Filed Jan. 13, 1936.
For Naptha.

PENN TRUMP, picture of an ace of spades card, Ser. No. 374,186. The Freedom Oil Works Company, Freedom, Pa. Filed Jan. 28, 1936.
For Lubricating Oils.

GRAF-O-LYTE, Ser. No. 374,211. Schott Brothers & Company, San Francisco, Calif. Filed Jan. 28, 1936.
For Wear Resisting and Friction Reducing Lubricant Adapted for Use in Lubricating Motors, Machines, and Equipment.

STARTLING, Ser. No. 374,550. Martin J. Cabana, Inc., Buffalo, N. Y. Filed Feb. 6, 1936.
For Automobile, Furniture, and Woodwork Polish and Cleaner.

CELLOFILM, Ser. No. 374,680. Louise Chalkley Given, doing business as The Cello Co., New Hope, Pa. Filed Feb. 10, 1936.
The word "Film" is disclaimed apart from the Mark as shown on the Drawing.
For Waxes for Polishing Automobiles, Floors and Furniture.

ACTOLITE, Ser. No. 373,552. Walter S. Baylis, Huntington Park, Calif. Filed Jan. 11, 1936.
For Activated Earth for Treating Lubricating Oils.

GLITTER SUPER CLEANER (Cleaner disclaimed) Ser. No. 374,557. Glitter Products, Inc., Detroit, Mich. Filed Feb. 6, 1936.
For Detergent Material Particularly Used for Cleaning Automobile Bodies and the Like.

TIDEX, Ser. No. 374,258. Tide Water Oil Company, Bayonne, N. J., and New York, N. Y. Filed Jan. 29, 1936.
For Gasoline.

BISHOP'S EEZ-ON, Ser. No. 373,243. Edward C. Bishop, doing business as Eez-On Products Company, Campgaw, N. J. Filed Jan. 2, 1936.
For a Wax Polish, for Automobiles, Woodwork, Floors, and the Like.

Another Oil Man Arrives

CHICAGO—A son, Maxwell Bruce, arrived April 14 at the home of Mr. and Mrs. M. B. "Max" Jester. Mr. Jester is chief chemist of the Calumet Refining Co., and is well known to oil marketers throughout the country.

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TRANSACTIONS IN OIL STOCKS ON NEW YORK STOCK EXCHANGE

1935 High	1935 Low	1936 High	1936 Low	Listed Shares	Par Value	Company	Current Dividend	Last Div. Paid	Transactions Week Ended April 18 Sales Shares	High	Low	Last	Week's Change
80	48 1/4	125	75	788,675	N.P.	Amerada Corp.	50cQ	Jan. 31, 36	2,500	110 1/2	107 1/4	108	— 5 1/2
44	29 3/4	51 1/4	42	2,290,412	$25	Associated Oil Co.	20c	Dec. 31, 35	40	42 1/2	†42	42	— 1 1/2
28	20 1/2	35 1/8	27 1/8	2,696,652	25	Atlantic Refining Co.	25cQ	Mar. 16, 36	21,000	33	31 3/8	32	— 1/2
14 3/4	5 7/8	20	14 1/8	2,258,779	5	Barnsdall Corp.	20c	Feb. 1, 36	30,700	19 3/8	17 7/8	18 1/4	— 7/8
9 7/8	6 3/4	24 3/4	8 1/4	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	430	23	21	21	— 2
12 1/4	6 1/2	15 1/4	11 7/8	13,996,072	N.P.	Consolidated Oil Corp.	25c	Apr. 1, 36	59,200	14 1/2	13 5/8	13 7/8	— 5/8
112 1/2	108 1/2	105 1/2	101	132,771	$100	do pfd	$1.25Q	Mar. 15, 36	.....	....	....	....	....
35	15 1/8	38 1/2	33 3/4	4,722,652	5	Continental Oil Co.	25c	Jan. 31, 36	17,800	36	34	34 5/8	— 1 1/4
22 1/2	11 3/4	34 3/4	22	413,333	$10	General Asphalt Co.	....	.....	5,800	31 7/8	30 1/4	30 1/2	— 1 1/4
17 3/4	9 1/2	....	....	95,841	100	Houston Oil Co.	....	.....	.....	....	....	....	....
7	1 1/2	12 1/4	6 3/8	678,234	25	do v.t.c.	....	.....	26,500	10 7/8	9 5/8	10 1/2	— 3/8
5 1/4	2 1/8	8 1/8	4 1/8	1,207,132	10	Indian Refining Co.	....	.....	30,200	13 1/2	5 1/8	12 3/4	+ 6 1/2
1 1/8	3/8	....	....	1,309,060	N.P.	Louisiana Oil Ref'g. Corp.	....	.....	.....	....	....	....	....
15	4 1/2	17 5/8	13	40,000	$100	do pfd	....	.....	380	14 3/4	13 1/2	14	+ 1/2
3	1	6 3/4	2 1/2	330,000	N.P.	Maracaibo Oil Exploration Co.	....	.....	5,400	5 1/4	4 5/8	5	0
20 1/2	9 1/2	23	19 1/4	1,857,912	$10	Mid-Continent Pet. Corp.	25c	Dec. 2, 35	12,300	22 3/4	21 1/4	21 1/4	— 7/8
14 1/4	9 1/4	17 1/2	13 1/2	6,563,377	N.P.	Ohio Oil Co.	15c	Dec. 14, 35	22,200	14 7/8	13 3/4	14 1/4	— 1/4
21	10 3/4	20 5/8	17	4,699,885	$5	Pan Amer. Pet. & Transp. Co.	....	.....	.....	....	....	....	....
1 7/8	1/2	4 1/4	1 5/8	199,370	N.P.	Panhandle Prod. & Ref'g. Co.	....	.....	4,200	3 5/8	3	3 1/8	+ 1/8
20	6 1/2	74 1/2	18 1/2	17,994	$100	do pfd	....	.....	830	70 1/8	63	65	0
14	7 5/8	18	13 3/8	2,153,444	5	Petroleum Corp. of America	33c	Oct. 31, 35	3,600	16 5/8	15 3/4	16	— 3/4
40	13 3/4	49 3/4	38 1/8	4,439,450	N.P.	Phillips Petroleum Co.	25cQC	Feb. 29, 36	26,600	47 5/8	45 1/2	46 3/8	— 1 3/8
1 1/4	1/4	2 1/4	7/8	1,184,817	$25	Pierce Oil Corp.	....	.....	.....	....	....	....	....
8	2 3/4	17	8	150,000	100	do pfd	....	.....	1,900	13 3/4	12 1/2	12 1/2	— 1/4
1 3/4	5/8	2 1/2	1 1/2	2,500,000	N.P.	Pierce Petroleum Corp.	....	.....	5,400	2 1/8	2	2	— 1/8
13	6 1/2	16 1/2	11 7/8	1,050,000	$5	Plymouth Oil	25cQ	Mar. 30, 35	14,900	15 3/4	15	15 1/2	— 1/4
17	5 7/8	24 7/8	16 5/8	3,038,370	N.P.	Pure Oil Co.	....	.....	52,300	22 5/8	20 3/4	21 3/4	— 1 1/8
103	34 3/4	118	102 1/8	167,640	100	do 6% pfd	....	.....	500	118	117	118	+ 1/2
119 1/4	49 5/8	133 1/2	115	130,000	$100	do 8% pfd	....	.....	260	133 3/4	130 3/4	131 3/4	— 1/2
48 1/2	29 1/4	57	48 3/8	425,342	a	Royal Dutch Co. (N. Y. shares)	$1.70	Aug. 1, 35	2,500	56 1/4	54 3/4	56 1/4	+ 3/4
36 1/2	20 3/4	42 1/2	33 1/4	1,244,383	N.P.	Seaboard Oil of Del.	25c	Mar. 14, 36	5,800	38 3/4	36 5/8	36 5/8	— 2
39	20 3/4	45	38 1/2	56,148	£2	Shell Transport & Trading Co.	$1.237	July 24, 35	150	44 3/4	44 1/2	44 3/4	— 1/4
16 1/2	5 1/2	19 1/4	15 1/4	13,070,625	N.P.	Shell Union Oil Corp.	....	.....	9,600	17 5/8	17	17 1/2	0
111	63 1/2	120	110 1/2	400,000	$100	do pfd. w.w.	....	.....	900	115 1/2	114 1/2	115 1/2	+ 1
18 3/4	4 3/4	6 3/4	5	461,000	10	Simms Petroleum Co.	**$1.00	Jan. 27, 36	2,500	5 1/8	5	5	0
20 1/2	6 1/2	31 1/2	19 1/2	1,180,069	25	Skelly Oil Co.	....	.....	4,500	29 5/8	27 1/2	28 1/4	— 1 3/4
116 1/4	60	132	116	120,000	100	do pfd	....	.....	4,200	131 1/4	129	130	— 2
15 3/4	10 5/8	17	14 1/8	31,701,348	15	Socony Vacuum Oil Co.	20c	Mar. 16, 36	89,800	15 1/8	14 1/2	14 3/4	— 1/8
116	111	113 1/2	112 1/2	764,925	100	S. O. Export Corp. pfd.	$2.50 S.A.	June 29, 35	500	112 1/2	112 1/2	112 1/2	— 1/2
41 1/8	27 3/4	47 3/4	39 7/8	13,102,900	N.P.	S. O. California	30c	Mar. 16, 36	15,300	44 3/4	43 1/8	43 1/8	— 1 1/2
33 5/8	23	40 1/4	32 3/4	15,215,677	$25	S. O. Indiana	25c	Mar. 16, 36	20,300	38 5/8	37 5/8	37 1/2	— 1 1/4
32	20	30	28 1/4	146,542	10	S. O. Kansas	50c	Oct. 31, 34	.....	....	....	....	....
52 3/8	35 3/4	70	51 1/8	25,740,965	25	S. O. New Jersey	75c	Dec. 16, 35	65,700	65 3/4	62 1/2	63 1/8	— 1 3/8
77	60 1/2	91	72	1,590,406	N.P.	Sun Oil Co.	25cQ	Mar. 16, 36	700	85	84 1/2	84 1/2	— 5/8
121	115 1/2	122	118	100,000	$100	do pfd	$1.50Q	Mar. 2, 36	80	121	120	120	— 1
3 1/2	1 5/8	6 3/4	3	966,979	$1	Superior Oil Corp. (Del.)	....	.....	24,200	5 3/4	5	5 1/2	+ 1/4
30 3/4	16 1/2	39 1/2	28 7/8	9,851,236	$25	The Texas Corp.	25cQ	Apr. 1, 36	39,200	38 3/4	37 1/2	38 1/8	— 5/8
9 1/4	3 1/4	15 1/4	7 1/2	930,570	10	Texas Pacific Coal & Oil Co.	....	.....	17,800	12 1/4	10 7/8	11 3/4	— 1/4
15 7/8	7 5/8	19 1/2	14 3/4	5,998,919	N.P.	Tide Water Associated Oil Co.	25c	Jan. 15, 36	25,900	18 1/8	17	18	+ 1/4
104 1/2	84	106 1/2	100 5/8	695,503	$100	do pfd. C. T. V.	$1.50	Apr. 1, 36	900	105 3/4	105	105 3/4	+ 3/4
48	26 3/4	60	52	2,191,823	N.P.	Tide Water Oil Co.	50c	Dec. 31, 35	.....	....	....	....	....
24	14 3/4	28 1/8	23 1/4	4,386,070	25	Union Oil of California	25cQ	Feb. 10, 36	12,800	26	25	25	0
26 1/2	20 1/4	31 5/8	22 5/8	1,200,000	N.P.	Union Tank Car Co.	30cQ	Mar. 2, 36	400	26 5/8	26	26	— 5/8
1 5/8	5/8	2 1/8	1 1/8	759,538	N.P.	Warner Quinlan Co.	....	.....	1,300	2 1/8	2	2 1/8	+ 1/8
3 1/8	1	5 1/4	2 3/4	431,443	$5	H. F. Wilcox Oil & Gas Co.	....	.....	11,200	5	4	4 3/8	— 1/8

*New high. †New low. x Ex-div. **Dividends of liquidation. ‡Stock dividend. a Par 33 1/3 florins.
C Paid 25c extra Feb. 20, 36.

STANDARD OIL STOCKS ON NEW YORK CURB MARKET

1935 High	1935 Low	1936 High	1936 Low	Shares Issued	Par Value	Company	Current Dividend	Last Div. Paid	Transactions Week Ended April 18 Sales Shares	High	Low	Last	Week's Change
16	6	18	12 1/4	36,000	$25	Borne Scrymser Co.	50c	Apr. 15, 36	50	13 1/8	13 1/8	13 1/8	+ 3/8
42 1/8	30 1/8	50	39 3/4	200,000	50	Buckeye Pipe Line Co.	75cQ	Mar. 14, 36	150	43 3/4	42 1/4	43 3/4	0
157	115	124 3/4	113	120,000	25	Chesebrough Mfg. Co.	$1.50	Mar. 31, 36	450	115 1/4	†113	115	+ 1 1/2
23 3/4	10	34 3/4	19 1/8	5,977,873	N.P.	Creole Petroleum Co.	20c	Dec. 31, 35	8,700	29 1/2	27 1/2	27 1/2	— 1 1/4
38	33 1/4	44	39	50,000	$50	Eureka Pipe Line Co.	$1Q	Feb. 1, 36	.....	....	....	....	....
64	44	76 1/2	62 1/2	8,968,479	N.P.	Humble Oil & Refg. Co.	25cQ	Apr. 1, 36	4,600	71	67 5/8	67 5/8	— 3 3/8
22 1/2	15 3/8	24 1/2	20	26,919,871	N.P.	Imperial Oil Ltd.	‡25cS.	Dec. 2, 35	12,600	23 1/2	22 3/8	23 1/8	— 5/8
22 1/2	15 7/8	24 3/8	20 1/8		N.P.	do registered	25cQ	June 1, 34	2,200	23 3/4	23	23 1/8	— 1/8
6 1/8	3 3/8	9 1/4	5 1/2	300,000	$10	Indiana Pipe Line Co.	20c**	Nov. 15, 35	500	7 1/2	7	7 1/2	0
39 3/8	28	39 3/8	33 1/2	14,324,088	N.P.	International Pet. Co.	‡75cS.	Dec. 2, 35	11,800	38 3/8	37 1/8	37 1/8	— 1 1/8
10 5/8	6 3/4	15 3/4	10 1/4	509,000	$12.50	National Transit Co.	35c	Dec. 15, 34	1,300	12 1/4	12	12	— 1/4
4 1/8	3	6 1/4	4 1/2	100,000	5	New York Transit Co.	15c S.A.	Oct. 15, 34	.....	....	....	....	....
8	5 1/4	9 3/4	7	120,000	10	Northern Pipe Line Co.	25c S.A.	Jan. 2, 35	300	7 3/8	7 1/4	7 3/8	0
107 1/4	90 1/4	109 1/4	104 1/8	562,122	100	Ohio Oil Co. pfd.	$1.50Q	Mar. 14, 36	700	109	108 1/2	109	+ 1/2
11	5 1/2	8	8	400,000	25	Penn Mex. Fuel Co.	....	Dec. 22, 33	300	6 1/2	6 1/4	6 1/2	— 1
5	3 1/8	7 1/8	4 1/8	100,000	10	Southern Pipe Line Co.	15c	Mar. 2, 36	100	5 1/2	5 1/2	5 1/2	— 1/4
34 1/2	21 5/8	40 1/2	32 1/2	1,200,000	25	South Penn Oil Co.	50c	Mar. 31, 36	2,200	39 1/2	37 3/4	37 3/4	— 2 1/4
56	45 1/4	58	54	35,000	50	South West Pa. Pipe Lines	$1Q††	Dec. 31, 35	.....	....	....	....	....
24	18	23 1/8	18	2,604,790	10	S. O. Kentucky	25c	Mar. 16, 36	4,100	18 1/4	18	18	— 1/4
12	7 3/4	14 5/8	11 1/2	188,403	25	S. O. Nebraska	....	June 20, 34	400	13 3/4	13 1/8	13 1/4	— 1/4
23 5/8	11 1/2	36 1/4	21 3/4	753,740	25	S. O. Ohio	....	Apr. 16, 34	3,100	*36 1/4	33 3/8	33 3/8	— 2 1/8
99 1/2	89	104 1/2	97	120,000	100	do 5% pfd.	$1.25Q	Apr. 15, 36	625	104	102	104	+ 1 1/4
6	2 1/4	6 1/4	5 3/8	34,158	25	Swan Finch Oil Corp.	87 1/2c	Mar. 16, 36	200	5 3/8	5 3/8	5 3/8	— 3/8

*New high. †New low. ‡Imperial Oil Spec. 37 1/2c Dec. 2, 35. Internationa Pet. Spec. 50c Dec. 2, 35.
x Ex dividend. **15c regular; 5c extra. ††Paid $1 extra Dec. 31, 35.

National Accounts Manager

NEW YORK, April 15.—W. J. Murr has been appointed national accounts manager of the Standard Oil Co. of New Jersey and its affiliated companies, Colonial Beacon Oil Co. and the Standard's of Pennsylvania and Louisiana, to succeed M. G. Cleary, who recently resigned.

Mr. Murr joined the Jersey company in 1916 and of recent years has handled national motor oil and aviation accounts. He was made assistant manager of the national accounts division when it was set up last year.

NEW YORK CURB BONDS

Week Ending April 18

	High	Low	Last	Change
Cities Serv. 5s '50	79 1/8	77 5/8	79	+1 1/4
Cities Serv. 5s '66	79 1/4	77	79	+1 1/2
Cities Serv. G. 5 1/2s '42	102 1/2	100 3/4	102 1/4	+1 1/2
Empire O & R 5 1/2s '42	89 1/4	86 1/2	86 1/2	—2 1/4
Gulf Oil 5s '47	105 1/2	105 1/4	105 1/2	+ 3/8
Valvoline Oil 7s '37	99 1/2	99	99	0

OIL AND ROYALTY STOCKS ON NEW YORK CURB

1935 High	1935 Low	1936 High	1936 Low	Par Value	Company	Transactions Week Ended April 18 Sales Shares	High	Low	Last	Week's Change
11/16	1/16	1 1/16	5/16	N.P.	American Maracaibo	23,700	1 3/16	1 3/8	1 5/8	+ 1/8
3 1/8	1/8	7 5/8	3 1/4	N.P.	Arkansas Nat. Gas	7,100	7 1/8	6 1/4	7	+ 5/8
3 3/4	1/8	7 3/4	3 1/4	N.P.	do A	31,200	7	6 1/8	6 3/8	0
7 1/2	2 1/4	9 3/8	7 1/8	$10	do pfd	2,900	8 7/8	8 1/4	8 5/8	+ 1/8
16 3/4	14 1/2	27 1/4	16 1/2	N.P.	British Amer. Oil coup.	200	25 3/8	25	25	— 3/8
4 1/4	1 5/8	4 1/8	2 1/2	$1/4	Carib Syndicate	61,100	4 3/16	3 3/16	4 1/16	+ 3/16
3 1/4	1/4	7 3/8	3	N.P.	Cities Service	117,100	5 1/4	4 3/4	5 1/4	+ 3/8
47 1/4	6 1/2	55 7/8	41 1/2	$100	do pfd	5,100	54	50	53 3/4	+ 1 3/4
4 1/8	1/8	6 1/2	4	10	do pfd. B	500	4 1/2	4	4 1/8	— 3/8
43	6	54	42	100	do pfd. BB	40	43	43	43	— 1
2 1/8	1/2	4	1 1/8	N.P.	Colon Oil Corp.	4,400	3	2 5/8	2 5/8	— 1/4
1 1/2	1/8	5 1/2	3/4	N.P.	Columbia Oil & Gas vtc.	14,900	4 3/16	4 1/4	4 1/4	— 5/8
3	1	5	2 1/8	$1	Consolidated Royalty	300	2 5/8	2 1/2	2 5/8	— 1/8
1 1/2	1/4	4 1/8	1 1/2	N.P.	Cosden Oil	5,600	3 1/8	2 3/4	3	— 1/4
6 1/4	3/4	17	6 1/2	$100	do pfd	600	13 1/2	13 1/8	13 1/2	— 1 3/8
2 1/2	5/8	2 3/4	1 3/4	N.P.	Crown Central Pet.	31,100	2 3/4	2 1/2	2 1/2	— 1/8
8 7/8	4	12	9	N.P.	Darby Petroleum	200	11 5/8	11 1/2	11 5/8	0
2	3/4	4 3/8	1 7/8	N.P.	Derby Oil & Refg.	1,800	4	3 5/8	4	0
20	20	49 1/4	25 1/2	N.P.	do pfd	.....	....	....	....	....
74 3/4	50 1/4	98	72	$25	Gulf Oil Corp.	6,000	96	91	91 1/2	— 4 1/2
4 1/4	1 5/8	6 1/4	3 1/4	N.P.	Indian Ter. Illg. Oil A	100	4 1/4	4 1/4	4 1/4	0
4 1/4	1 1/2	6 1/2	3 1/4	N.P.	do B	600	4 1/2	4	4	— 1/4
3	1 1/2	5 5/8	2 5/8	N.P.	Kirby Petroleum	8,800	4 3/16	3 3/16	4 3/8	+ 3/8
3/4	1/4	2	1/2	$25	Leonard Oil Dev.	14,600	1 3/8	1 1/8	1 1/4	0
8 1/4	3 1/2	15	7 3/8	N.P.	Lion Oil Refg.	7,400	14	12 3/4	12 3/4	+ 1/4
10 7/8	4 1/2	14 1/4	9 7/8	N.P.	Lone Star Gas	4,800	14 1/8	13 1/4	13 1/4	— 3/4
19	4	22 1/4	14	N.P.	Margay Oil Co.	300	20 3/4	19	19	— 1 3/8
2 5/8	7/8	4 1/8	1 7/8	N.P.	Mexico-Ohio Oil	400	3 3/16	3 1/2	3 1/2	— 1/2
3 5/8	1 7/8	4 3/4	1 7/8	N.P.	Michigan Gas & Oil	1,300	4 1/16	3 5/8	3 3/4	— 3/8
3 7/8	7/8	6	3	N.P.	Mid. States Pet. A vtc.	1,400	4 1/2	4 1/8	4 3/8	+ 3/8
11/16	1/4	2 5/16	11/16	N.P.	do B vtc.	5,100	1 1/2	1 1/4	1 1/4	— 1/4
1/2	1/4	11/16	1/4	$1	Mountain & Gulf	.....	....	....	....	....
5 3/4	4 1/16	8 3/8	5	10	Mountain Producers	3,900	6 1/2	6	6 1/8	— 3/8
20	11 3/4	23	19 1/4	N.P.	National Fuel Gas	1,600	21 1/4	20 3/8	20 3/8	— 7/8
3 1/4	2	4 1/2	2 7/8	$5	New Bradford Oil	400	4	3 3/4	3 3/4	— 3/8
4	2	8 3/8	3 3/8	N.P.	North Central Texas	700	7 5/8	7	7 5/8	+ 1/4
7/8	1/2	1/2	1/4	N.P.	North European	15,800	3/8	5/16	3/8	0
12 3/4	9 3/8	15 1/4	14 3/4	N.P.	Oil Stocks Ltd. A	200	15	15	15	— 1/8
4 3/8	1 1/4	6 1/4	3 1/4	N.P.	Pantepec of Venezuela	50,100	6	5 1/4	5 3/4	0
3/8	1/8	1	1/4	N.P.	Producers Royalty	7,700	5/16	1/4	5/16	+ 1/16
3 3/4	1/2	15 1/2	3	N.P.	Red Bank Oil	4,200	10	8 3/4	8 5/8	— 1 3/8
1/2	3/8	1 1/2	1/8	N.P.	Reiter-Foster Oil	7,500	1 1/4	1 1/8	1 1/8	0
2 7/8	1/2	2 3/4	1 1/2	$25	Richfield Oil pfd.	1,300	2	1 3/4	1 3/4	0
5	1 1/2	19 1/4	4 1/2	..	Root Petroleum	41,400	17 3/4	15 1/4	15 1/2	— 1 3/4
15 1/16	8	23	14 1/2	10	do conv. pr. pfd.	100	20 1/8	20 1/8	20 1/8	— 1 7/8
....	....	39	36 1/2	$10	Royalty Corp. pfd.	....	....	....	....	....
2 1/2	5/8	4 3/4	1 7/8	N.P.	Ryan Consolidated	3,400	4	3 1/2	3 3/4	— 1/4
1	1/8	2 1/8	1/2	$10	Salt Creek Consolidated	.....	....	....	....	....
7 1/2	5 1/2	10	7	10	Salt Creek Prod.	2,300	8 1/4	8	8	— 1/4
6 7/8	4 3/4	11 1/4	6 1/4	N.P.	Southland Royalty	1,800	10	9 3/8	9 3/8	— 5/8
2 7/8	7/8	5	2 5/8	$5	Sunray Oil	98,800	*5	4 1/2	5	+ 1/2
4	2	6	4 1/4	$1	Swiss Oil Corp.	24,400	5 3/8	5	5 1/8	— 1/4
6 7/8	5	9 3/4	4 1/2	N.P.	Texon Oil & Land	2,700	7	6 3/4	6 3/4	0
2 1/4	1/8	3 1/2	1 1/2	$5	Venezuela Petroleum	400	*3 1/2	3 3/8	3 3/8	+ 1/8
6 3/8	3 1/2	11	5 5/8	1	Woodley Petroleum	1,000	9 3/8	9	9	— 1/2

*New high. †New low.

OIL DIVIDENDS

Dividends Waiting Payment

Company	Amount	Record	Payable
Barnsdall Corp. extra	5c	Apr. 10	May 1
Barnsdall Corp. q	15c	Apr. 10	May 1
Cons. Royalty Oil q	5c	Apr. 15	Apr. 25
Continental Oil	25c	Apr. 6	Apr. 30
Eureka Pipe Line q	$1.00	Apr. 20	May 1
Indiana Pipe Line	20c	Apr. 24	May 15
Mid-Continent Pet.*	40c	May 1	June 1
New Bedford Oil	10c	Apr. 15	May 15
Pure Oil Co. 8% pfd. Ac.	a$25.50	Apr. 7	Apr. 20
Pure Oil Co. 6% pfd. Ac.	b$19.12 1/2	Apr. 7	Apr. 20
Pure Oil Co. 5 1/4% pfd. Ac.	c$16.87 1/2	Apr. 7	Apr. 20
Union Oil of Calif. q	25c	Apr. 20	May 9

*Last paid 25c Dec. 2, 35.

(a In respect of stock not deposited under plan; stock deposited to receive in exchange 1.34 shrs. new 6% pfd and $1.50 in cash, or one share new 8% pfd., 24/100ths of a share new 6% pfd. and $1.50 in cash.)

(b In respect of stock not deposited under plan; stock deposited to receive in exchange 1 18 shrs. new 6% pfd. and $1.12 1/2 in cash.)

(c In respect of stock not deposited under plan; stock deposited to receive in exchange 1.16 shrs. new 6% pfd. and 87 1/2c in cash.)

CLEVELAND STOCK EXCHANGE

Transactions Week Ended April 18, 1936

	Sales	High	Low	Last	Change Over Week
Canfield Oil	....	....	....	....	....
do pfd	....	....	....	....	....
Nat'l Refining	60	7	7	7	— 1/8
do pfd	55	67	67	67	—9

PITTSBURGH STOCK EXCHANGE

Transactions Week Ended April 17, 1936

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas	75	6 3/4	6	6 3/4	— 1/4
do pfd	600	8 5/8	8 3/8	8 5/8	+ 1/8
†Cities Serv.	685	5 1/4	4 5/8	5	+ 1/4
XD Col. Gas & Elec.	1,160	21	19 5/8	19 5/8	—1 1/4
†Col. Oil & Gaso., VTC	778	5	4 1/8	4 1/8	— 5/8
Devonian Oil	135	19 1/2	19	19	0
Lone Star Gas	3,465	14	13 1/2	13 1/2	— 5/8
† do 6 p.c. conv. pfd	50	106	106	106	0
Mountain Fuel Supply	2,252	6 1/2	6	6	— 3/4
Plymouth Oil	122	15 7/8	15 1/4	15 1/4	— 5/8
Shamrock Oil Gas	10,310	5 1/8	4 1/2	4 1/2	— 1/2
†Standard Oil of N. J.	377	65 1/2	62 1/2	64 7/8	— 1/2
Waverly Oil Works A	280	2	1 3/4	2	+ 3/4

†Unlisted. XD Ex dividend.

NEW YORK BONDS

Week Ended April 18

	High	Low	Last	Change
Atlantic Refg. deb. 5s	105 1/8	105	105	— 1/8
Houston Oil 5 1/8s	102 1/8	101 3/4	101 7/8	— 1/8
Pan Amer. Pet. of Calif. 6s	52	50 1/2	52	0
Pan Amer. Pet. of Calif. 6s ctfs	51	48	48	—2
Pure Oil 4 1/4s '50	125 1/4	121	123	—1 1/2
Richfield Oil of Calif. 6s	45 1/2	42	42 1/2	— 1/4
Richfield Oil of Calif. 6s ctfs	45	41	41 3/4	+ 3/4
Shell Union Oil 3 1/2s	96 1/8	95 3/8	95 5/8	— 1/4
Shell Union Oil 5s w.w.	101 3/32	101 3/32	101 3/32	— 3/32
Skelly Oil 4s '51	98 3/4	98 3/8	98 3/4	+ 1/4
Socony-Vacuum 3 1/2s	104 7/8	104 1/2	104 7/8	— 3/8
Union Oil of Calif. 4s	114 3/4	114	114 1/2	0
Warner-Quinlan 6s	37 1/2	33 1/4	36	+2 1/8

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TRY THIS *on your Extinguisher*!

We admit we "staged" this . . . but we simply set up the meanest possible running-gasoline fire. Along the top of a 12-ft. wall we set a perforated pipe which sprayed gasoline all over it. This was ignited—allowed to burn for a quarter-minute. Then we attacked this flaming waterfall with a LUX Wheeled Unit. *The blaze was completely out in 7 seconds.* And gasoline continued to stream down the wall—but no more fire.

There's an easy moral here. Get an extinguisher that will handle the worst kind of fire. Then you have one that will handle *any kind* of fire.

LUX carbon-dioxide snow-and-gas *snuffs out* fire . . . does it faster than any other extinguishing agent. In the oil marketing field, all along the way from refinery to filling station, LUX extinguishers are vital, necessary. Write for new booklet, "Instant Death to Any Fire."

LUX SNUFFS OUT FIRE

Walter Kidde & Company
46 West Street, Bloomfield, N.J.

Effective Fire Protection For The Oil Industry

Drops Unprofitable Gallonage To Improve 1935 Earnings

IMPROVED marketing methods which included discarding unprofitable business in the amount of 30,000,000 gallons annually but resulted in an improvement of $2,284,300 in marketing operations was largely responsible for the better showing made by Continental Oil Co. in 1935 as compared with 1934.

During 1935, the company's marketing program centered on improving marketing methods to the exclusion of expansion, Dan Moran, president told stockholders in his annual report. "Increased effort was applied to the sale of the company's house brand gasoline and its premium lubricant with the result that sales of these products increased 3.79 per cent and 14.06 per cent respectively over sales in 1934," he explained.

Net earnings of the company for the year ended Dec. 31, 1935 were $8,813,561, equal to $1.88 a share on 4,682,664 shares of stock (par $5) outstanding, not including 55,930 shares held in the treasury. This compares with net earnings of $4,865,358 or $1.03 a share in 1934.

Included in the earnings for 1935 are non-recurring profits of $1,564,608, equal to 33 cents a share, resulting from the sale of two tankers not needed by the company, certain gas rights in the Texas Panhandle and northern Oklahoma, all of the stock of the Kansas-Osage Gas Co. and Kay County Gas Co. and all the assets of Ponca City Gas Distributing Co.

Gross operating income for 1935 amounted to $69,501,247, an increase of $3,779,899 or 5.75 per cent over 1934. Costs, including the cost of merchandise sold, operating and administrative expenses, and taxes were $55,098,253 an increase of only $236,126 or 0.43 per cent over 1934.

Crude oil production showed a slight increase over 1934, but due to low prices prevailing for California crude, earnings from this source were not as large as in 1934. Intangible development costs, charged against current income, were $4,380,022 compared with $2,210,462 the year before.

At the end of 1935 the company had under lease 1,488,872 net acres of which 91,398 were producing. Of the 277 wells completed during the year all but 54 were productive. These productive completions substantially increased the proven acreage of the company.

During 1935, 11,992,274 barrels of crude and 7,748,970 barrels of rerun stock were processed by the company's ten refineries. This resulted in the operation of still capacity at 67 per cent compared with 67.4 per cent in 1934.

Results of 1935 as compared with 1934 in the various branches of the Company's business are shown in the following table. All items shown represent net interest to Continental and subsidiaries in consolidation.

	1935	1934
Production of crude oil	14,377,084	13,421,459
Daily av. crude production	39,389	36,771
Pipe line runs of crude	13,105,731	12,327,878
Refinery crude runs	11,992,274	13,228,679
Inventory of crude, Dec. 31	8,937,710	9,531,062
Inventory of refined products on Dec. 31	4,248,659	5,285,956
Sales of crude oil	15,441,521	12,292,195
Sales of refined products	14,062,003	14,019,981
Number of stockholders on Dec. 31	28,760	30,260

Consolidated income account for year 1935 compares as follows:

	1935	1934
Gross earnings	$69,501,247	$65,721,348
Costs, exp. and tax	55,098,253	54,862,127
Oper. profit	$14,402,994	$10,859,221
*Other income	2,183,273	1,448,486
Total income	$16,586,267	$12,307,707
Interest, etc.	.....	351,626
Depreciation	3,849,305	3,921,688
Depletion, etc.	803,357	683,822
Intang. devel. cost	4,380,022	2,210,462
Min. int.	11,397	12,252
Profit	$7,542,186	$5,127,857
Fed. and state inc. taxes	205,212	125,450
Prem. and exp. on bds.	.....	‡246,797
Other charges	88,021	.....
Profit	$7,248,953	$4,755,610
Prof. on sale of prop.	1,564,608	.....
Prof. on sale of inv., etc.	.....	109,748
Net profit	$8,813,561	$4,865,358
Dividends	4,097,149	2,341,274
Surplus	$4,716,412	$2,524,084

*Includes equity in earnings of controlled companies not consolidated, after reserve for losses.
‡Premium and expense on bonds purchased or called for redemption.

Consolidated balance sheet of Continental Oil Co. and subsidiaries as of Dec. 31, 1935, compares as follows:

Assets	1935	1934
Cash	$11,438,067	$6,240,859
U. S. Govt. sec. at cost	20,000	20,000
Notes and accts. rec., after res.	¶6,189,318	4,166,976
Inv. of crude oil and ref. prod.	†19,748,742	20,224,950
Mater. and supplies	596,992	636,299
Other curr. assets	265,945	177,640
Inv. in and adv. to contr. cos. aft. res.	3,670,087	4,047,726
Oth. inv. and adv. after res.	8,048,171	7,572,261
Notes and accts. rec. (not curr.)	636,525	.....
Dep. for red. of bonds, int., etc.	27,003	466,099
*Prop. accounts	39,825,882	40,647,154
Unadjust. debits, etc.	628,310	872,782
Def. charges	651,979	799,401
Total	$91,747,021	$85,872,147

Liabilities		
Accts. payable	$3,977,955	$4,247,819
Divs. payable	1,224,415	.....
Accrued liabilities	1,700,371	1,703,118
Prov. for fed. taxes	201,683	125,450
Unred. bonds, int. coupons, etc.	27,003	466,099
Def. credits	253,962	.....
Minority interest	133,647	209,037
Res. for insurance	1,487,030	1,487,030
Res. for annuities	1,301,881	1,368,671
Res. for conting., etc.	865,981	791,254
‡Capital stock	$23,692,966	23,692,966
Paid-in surplus	47,431,530	46,949,207
Earned surplus	9,448,597	4,831,496
Total	$91,747,021	$85,872,147

*After depreciation, depletion and intangible development costs. †At lower than market. ‡Par $5. §Including 55,929 shares held in treasury and carried at no value. ¶Includes $1,650,000 notes and accounts receivable arising from sales of certain properties.

* * *

General Asphalt Co.

General Asphalt Co. and its subsidiaries report net income of $153,435,- after all charges, in 1935, equal to 40 cents a share on 386,223 shares (par $10) of capital stock. This compares with net loss in 1934 of $296,588.

Gross sales totaled $9,293,751 in 1935 compared with $8,084,072 in 1934. At the same time total costs and expenses were only $8,817,230 compared with $8,428,522.

Current assets as of Dec. 31, 1935 were $5,570,390 compared with $5,- 047,114 at end of previous year. On Dec. 31, 1935 current liabilities were $463,953 compared with $359,383.

* * *

Union Oil Co. of California

Reflecting the unsettled marketing conditions on the west coast, Union Oil Co. of California's net profit in the first quarter of 1936 was less than one-third the net profit reported the first quarter of 1935.

Estimated net profit the first three months of 1936 was $400,000, after all charges, equal to 9 cents a share on 4,386,070 shares of capital stock. This compares with $1,350,000 or 31 cents a share in the March quarter, 1935.

* * *

Chesebrough Mfg. Co.

Chesebrough Mfg. Co. reports net profit in 1935 of $690,034, after all charges, equal to $5.75 a share on 120,000 shares (par $25) of capital stock. This compares with $641,671 or $5.12 a share in 1934.

Current assets on Dec. 31, 1935 were $3,689,713 compared with $3,- 765,492 at end of previous year. Current liabilities on Dec. 31, 1935 were $129,403 compared with $154,822.

* * *

Hickok To Redeem Debentures

The Hickok Oil Corp. of Toledo will redeem on May 1 all of its $1,022,- 100 6 per cent debentures which were issued in 1928. They are redeemable at a premium of 1½ per cent and accrued interest to May 1.

Automotive Men Resign

TULSA, April 18.—C. L. Bowman, in charge of the Shell Petroleum Corp.'s automotive division at Tulsa, has resigned effective May 1 and will be succeeded by E. J. Strawn, formerly Mr. Bowman's assistant. J. S. Wallace, another employe in the Shell offices here also has resigned, effective the same date, and Messrs. Bowman and Wallace have formed a partnership to handle the Allis-Chalmers line of farm tractors and implements in the Tulsa and Bixby areas.

Orders Refinery Workers Be Given Jobs Back

WASHINGTON, April 20.—Overruling its own trial examiner, who held otherwise, the National Labor Relations Board has found that Bell Oil & Gas Co., Grandfield, Okla., allegedly discharged last September three workers because of their union activities. The board dismissed a complaint regarding four other workers.

The case arose out of a strike last September which the company contended broke an agreement not to strike while the U. S. Labor Department conciliator, Dr. E. A. Elliott, handling the case, was away. The NLRB decision, however, points out that the agreement was with Dr. Elliott and not the company. This makes the discharged employes involved in a "current labor dispute", thus retaining their status as "employes", according to the board.

The company was ordered to reinstate the three men with adjusted back pay from the date of their discharges.

New Oil Movie

NEW YORK, April 17.—A new sound motion picture "The Magic of Oil", has just been produced by the technical staff of the Esso Marketers group and will be shown to motorists, company employes and dealers through its marketing territory. The picture depicts the story of laboratory development work undertaken to produce superior motor oils.

Boosts New Gasoline

TULSA, April 18.—The Deep Rock Oil Corp. is holding a series of meetings for its dealers to acquaint them with the merits of the company's Volta-Charged gasoline, a new high test product being made at its Cushing refinery. More than 60 dealers in Oklahoma attended a recent meeting at the Alvin hotel in Tulsa.

Heads Industrial Relations

LOS ANGELES, April 17.—A. C. Galbraith, assistant vice-president of Union Oil Co. of Calif., has been placed in charge of industrial and personnel relations. He will promote a closer contact between the personnel and executive departments.

THE OIL INDUSTRY EXCHANGE

Situations Open

TANK CAR SALES MANAGER wanted for Middle Western States territory. State qualifications. Address Box 311.

EXPERIENCED DESIGNING ENGINEER WANTED by large oil refinery engineering company. Chemical or mechanical engineering graduate and with several years experience on cracking and distillation plant design. Give educational record, experience, age and salary expected. Enclose photograph and references. Box 310, National Petroleum News.

Business Opportunities

OWNER OF INDUSTRIAL WATERFRONT PROPERTY in Brooklyn, N. Y., would contact oil company wishing to arrange a mutual fuel oil or other oil proposition. Address Box 312.

For Sale

500-GALLON TANK TRUCK. Seven compartments, three closed can boxes, safety valves. Red, lettered Texaco. Mounted on 1932 dual tired long wheel base 1½-ton truck. Vicinity Cincinnati. Box 313.

FOR SALE AT A BARGAIN. A completely-equipped bulk plant, two-story, full basement, brick building, 40 x 120 feet, 250,000-gallon storage, pumps for loading and unloading, good trackage, excellent location in city of Des Moines, Iowa. Address Box 314.

Professional Services

PHOENIX CHEMICAL LABORATORY
AN EXCLUSIVE PETROLEUM TESTING LABORATORY
Equipped for all known tests and research in petroleum products
3953 Castello Ave. Chicago
Telephone—Spalding 3578

BURRELL-MASE ENGINEERING CO.
Law and Finance Building
Pittsburgh, Pa.
PETROLEUM & NATURAL GAS
Consultation—Construction—Testing

ANTI-KNOCK VALUE DETERMINATIONS
THE GRAY INDUSTRIAL LABORATORIES
Chemists and Engineers
Specialists on Petroleum Products
961-976 Frelinghuysen Ave.,
NEWARK, N. J.
Telephone Bigelow 3-4020

12.56% Rise in January Gasoline Demand Shown by Tax Reports

NEW YORK, April 15

GASOLINE consumption in the United States the first month of this year increased 12.56 per cent over January a year ago. In January, 1935, there was a decrease of 1.36 per cent under January, 1934. The amount of increase was 144,133,000 gallons, with total gallonage in January amounting to 1,291,571,000 gallons, according to tax reports filed by wholesalers and dealers under state gasoline tax laws, the American Petroleum Institute indicates.

Only three states showed decreases, these being Florida, North and South Dakota. Decreases were 5.28 per cent for both Florida and North Dakota, and 14.53 per cent for South Dakota.

Increases ranged from 1.50 per cent in Kentucky to 66.74 per cent in Montana. The large consuming states increased as follows: California, 15.45 per cent; Illinois, 9.94; New York, 3.38; Ohio, 8.21; Pennsylvania, 5.29; and Texas, 8.76 per cent.

Detailed figures are given in the accompanying table.

Gasoline Consumption By States, January 1936

(Figures in Thousands of Gallons)

	Month of Dec., 1935 Gallons	Month of Jan., 1936 Gallons	Jan., 1935 Gallons	% Change 1936 over 1935
Alabama	14,664	13,351	12,393	+7.73
Arizona	7,333	7,288	6,071	+20.05
Arkansas	13,057	11,953	10,266	+16.43
California	114,839	116,722	101,098	+15.45
Colorado	14,006	14,312	12,484	+14.64
Connecticut	21,156	19,021	15,908	+19.57
Delaware	3,463	2,831	2,565	+10.37
District of Columbia	9,679	8,900	7,645	+16.41
Florida	29,420	26,295	27,762	—5.28
Georgia	22,161	20,418	19,284	+5.88
Idaho	5,198	4,111	3,269	+25.76
Illinois	84,116	73,800	67,128	+9.94
Indiana	38,008	36,067	30,485	+18.31
Iowa	31,700	29,194	24,640	+18.48
Kansas	29,231	29,600	26,034	+13.70
Kentucky	15,928	14,214	14,004	+1.50
Louisiana	16,486	15,771	13,303	+18.55
Maine	8,144	6,748	5,977	+12.90
Maryland	17,205	15,037	13,249	+13.49
Massachusetts	47,201	40,968	37,369	+9.63
Michigan	68,055	65,780	55,366	+18.81
Minnesota	29,914	28,757	23,381	+22.99
Mississippi	13,164	12,802	10,771	+18.86
Missouri	42,233	40,807	34,896	+16.94
Montana	6,300	6,568	3,939	+66.74
Nebraska	17,645	16,182	15,533	+4.18
Nevada	2,249	1,936	1,882	+2.87
New Hampshire	5,033	4,614	4,034	+14.38
New Jersey	51,378	45,013	35,018	+28.54
New Mexico	5,100	5,239	3,933	+33.21
New York	123,902	110,151	106,552	+3.38
North Carolina	26,416	22,618	20,600	+9.80
North Dakota	5,711	4,466	4,715	—5.28
Ohio	78,678	78,632	72,664	+8.21
Oklahoma	27,548	26,880	23,783	+13.02
Oregon	13,610	12,647	10,446	+21.07
Pennsylvania	92,558	78,440	74,501	+5.29
Rhode Island	8,717	7,951	6,983	+13.86
South Carolina	11,870	11,132	10,129	+9.90
South Dakota	7,870	6,805	7,962	—14.53
Tennessee	18,406	18,182	16,720	+8.74
Texas	80,434	80,035	73,588	+8.76
Utah	5,885	5,703	4,334	+31.59
Vermont	3,625	3,279	2,398	+36.74
Virginia	22,346	24,086	18,462	+30.46
Washington	20,435	19,373	15,558	+24.52
West Virginia	11,593	11,174	10,411	+7.33
Wisconsin	31,921	32,454	25,456	+27.49
Wyoming	3,585	3,264	2,489	+31.14
Total	1,379,176	1,291,571	1,147,438	+12.56
Daily Average	44,490	41,664	37,014	+12.56
Change from previous year:				
Total change	.....	144,133	.....	
Percentage change in Daily Average	.....	+12.56%	.....	

Oil Accidents Decline

NEW YORK, April 18.—Substantial declines in accidents in the petroleum industry took place in 1935, according to a summary just released by the American Petroleum Institute's Department of Accident Prevention.

The report showed decreases of 12.1 per cent in frequency of fatal injuries; 8.3 per cent in injury severity; 2.4 per cent in injury frequency and of 5.6 per cent in the injury index. The summary covers approximately 300,000 employes working in the United States in 1935 and the accident experience record of 146 companies.

Industrial fatalities in 1935 were reported at the rate of 37 per 100,000 workers, compared to 42.1 in 1934 and 76.3 in 1928. The severity of injuries shows a loss of 1.55 days for each 1,000 hours worked in 1935 as against 1.69 days in 1934 and 2.65 days in 1927.

The frequency of injuries is reported as 13.96 disabling injuries for each 1,000,000 hours worked in 1935, compared to 14.31 in 1934 and 31.15 in 1927. The injury index is recorded as 29.46 in 1935; 31.21 in 1934; and 57.65 for 1927.

March Collections Lower

WASHINGTON, April 20.—Collections from the federal gasoline tax fell sharply during March, according to a report today by the Internal Revenue Bureau, totaling $8,838,869 as compared with $10,109,792 in March a year ago.

Lubricating oil taxes totaled $1,393,367 in March as against $1,996,970 in the same month in 1935. The tax on oil transported by pipeline brought in $790,026 as compared with $822,707 last year.

Despite the drop in March, however, the total gasoline tax for the first nine months of the current fiscal year was $135,027,249, or $12,407,071 ahead of the same period last year. Lubricating oil taxes aggregated $19,312,571, which was $713,707 greater than last year.

Union Oil Promotes Sykes

LOS ANGELES, April 17.—Frederick Sykes, formerly in charge of marketing package specialties for the Union Oil Co., was placed in charge of merchandise sales through service stations April 15. He succeeds L. V. Shepherd, now Southern Regional Manager for Union service stations.

Mr. Sykes joined Union in 1931, coming to the Pacific Coast from the east where, from 1928 to 1930, he had been sales manager of the Daggett and Ramsdell division of Stanco Inc. (subsidiary of Standard Oil Co. of New Jersey).

R. M. Harper, was appointed to succeed Mr. Sykes and will be responsible for the specialty products.

Humble Posts Talco Crude

HOUSTON, April 20.—On April 15 Humble Oil & Refining Co. made its initial posting of prices for Talco, Tex., crude at $0.60 per barrel. The Talco field is in Titus and Franklin counties, northeast Texas. The crude is low gravity and has a low gasoline yield, but is understood to have good lubricating qualities. (See N.P.N. of April 1, page 104.)